

FIG. 1

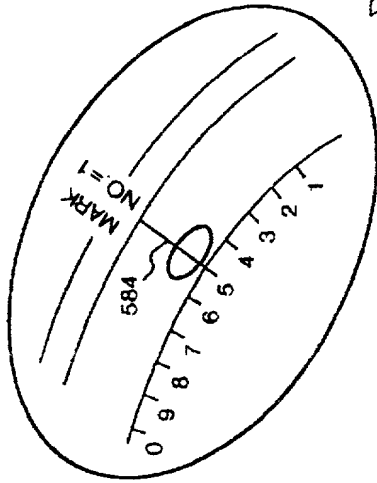


FIG. 2B

FIG. 2C

NONREFLECTIVE PITS ARE FORMED IN RADIAL DIRECTION

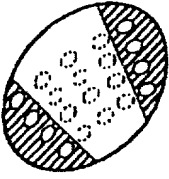


FIG. 2A

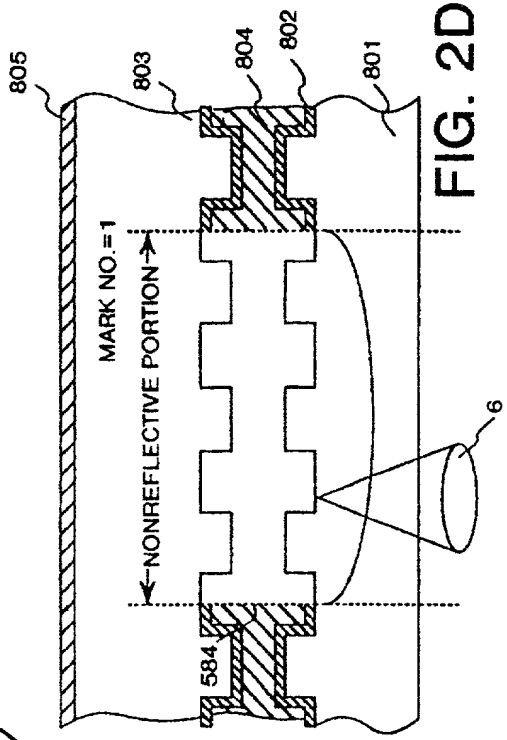
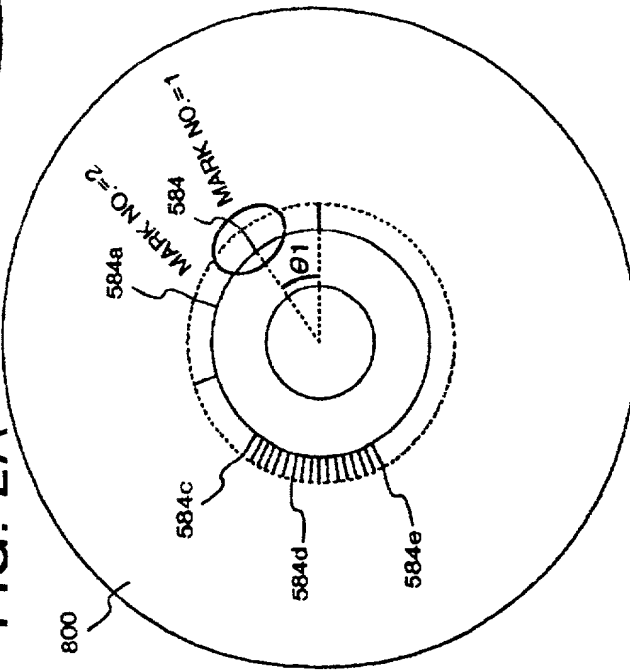


FIG. 2D

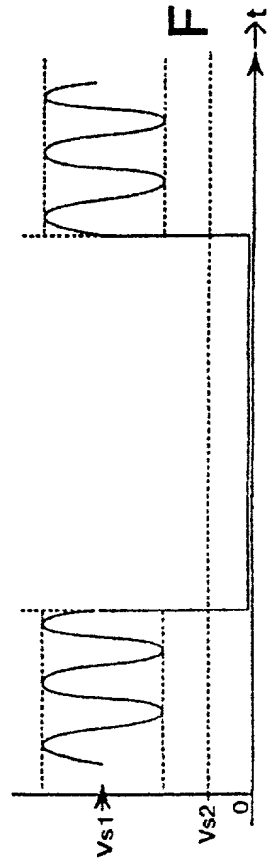


FIG. 2E

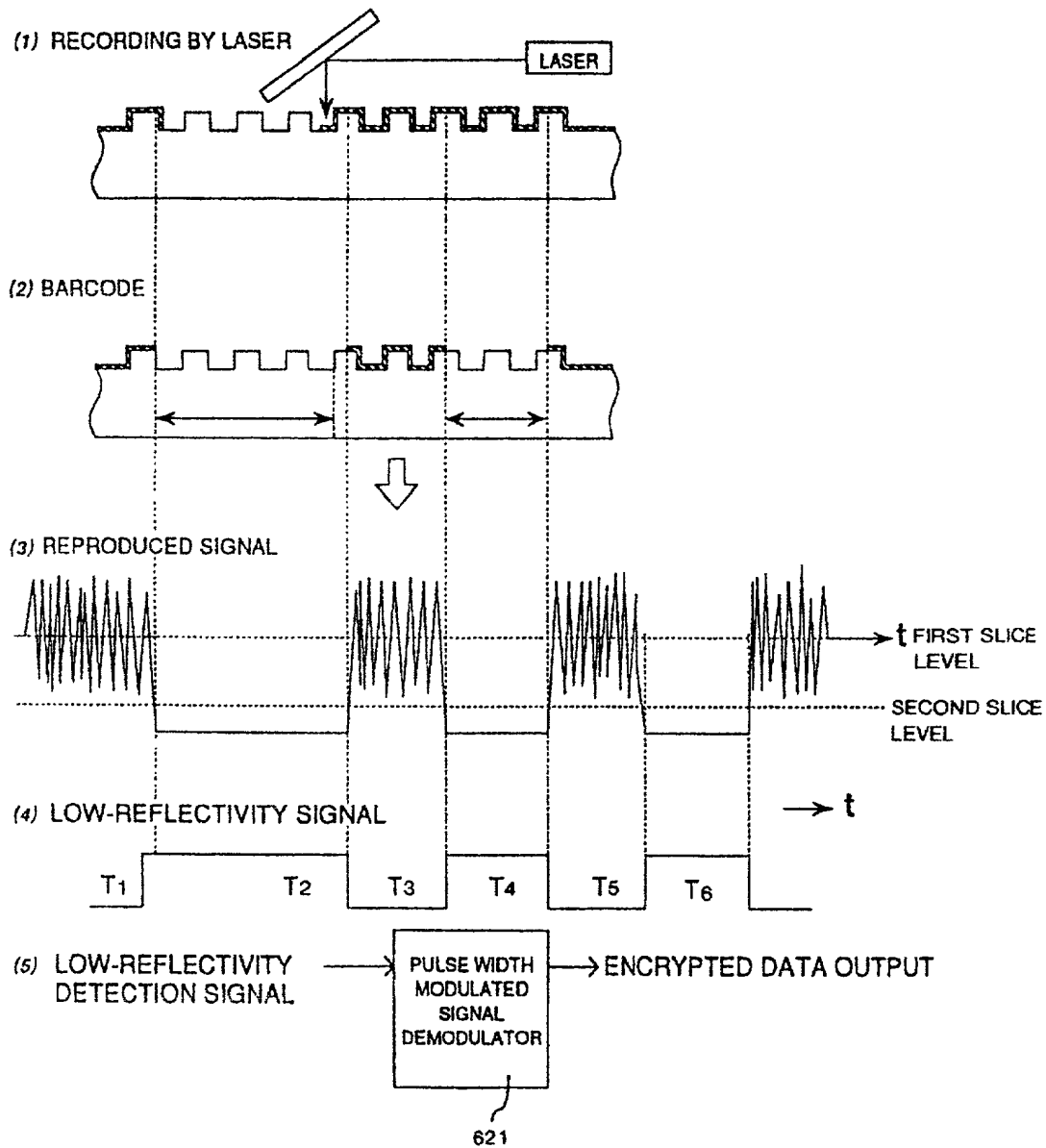


FIG. 3

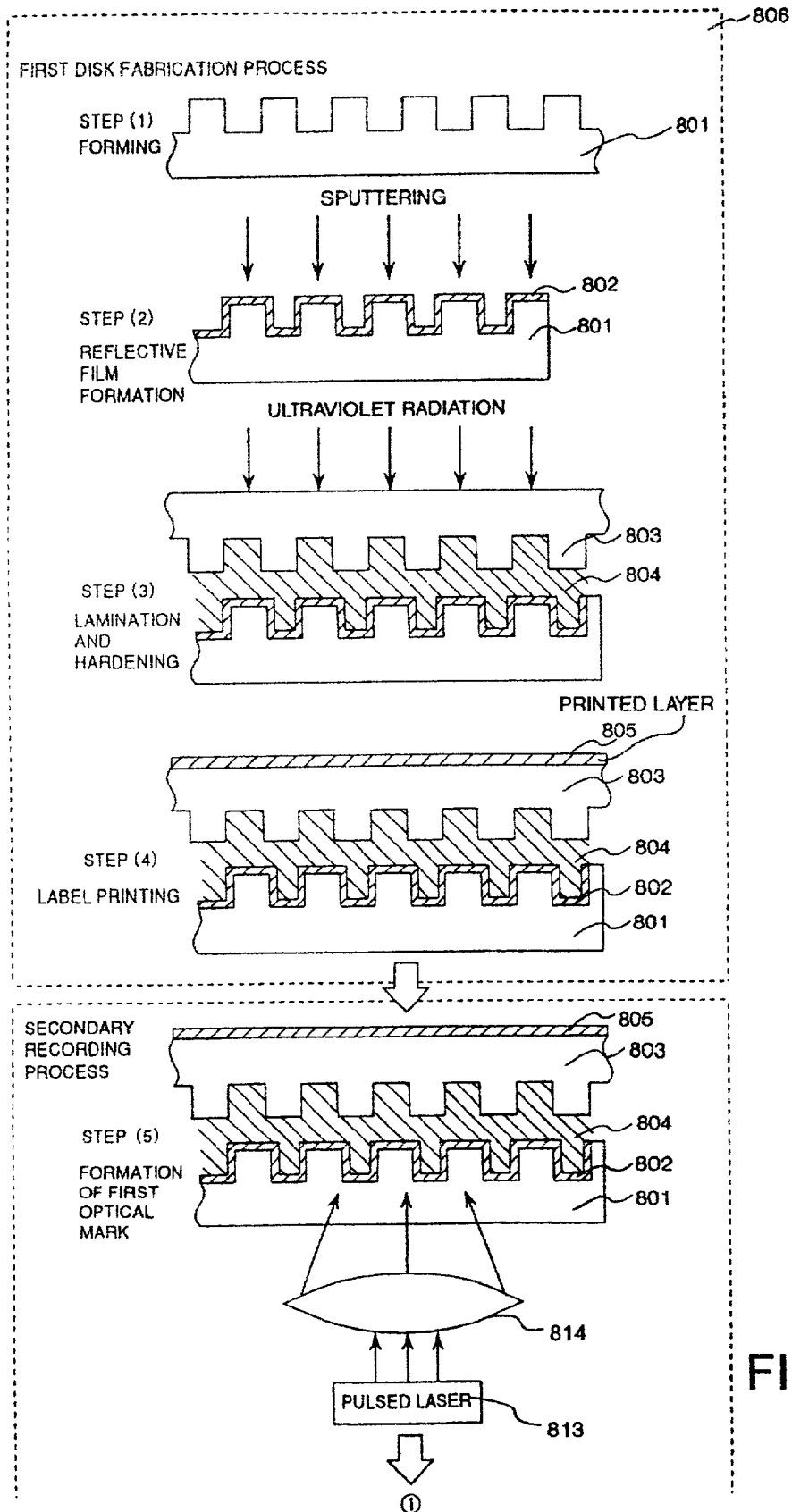
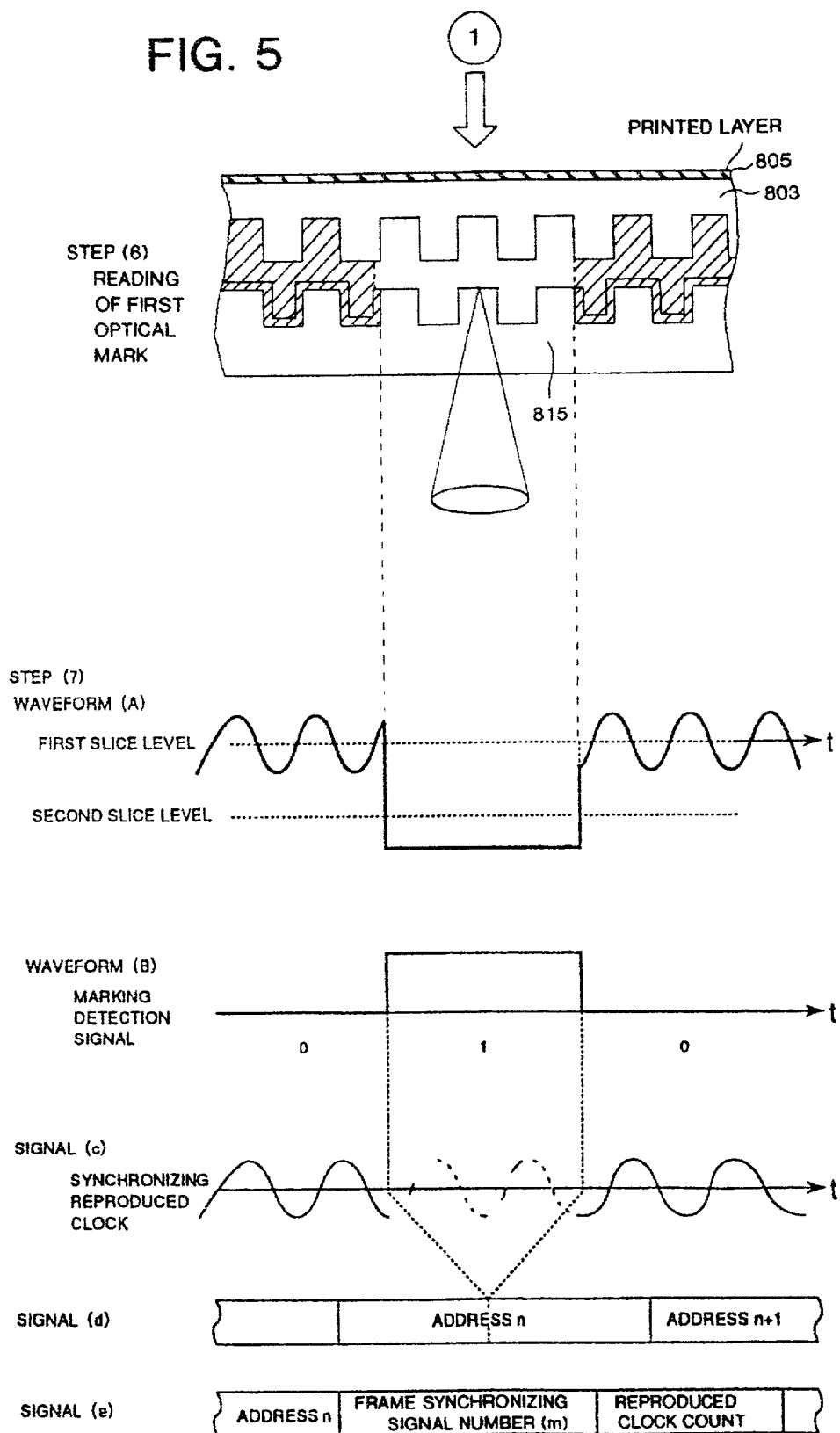


FIG. 4

FIG. 5



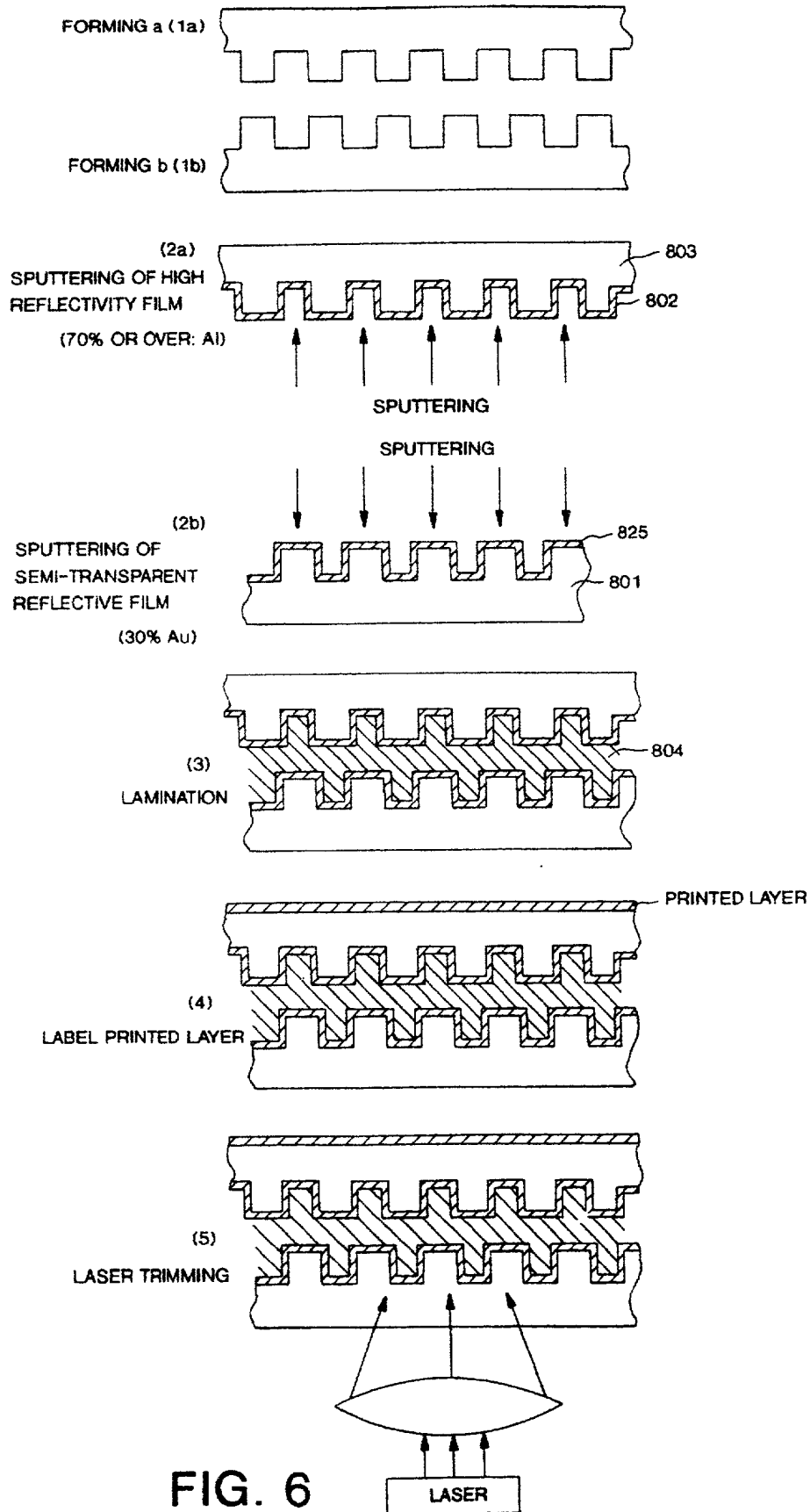


FIG. 6

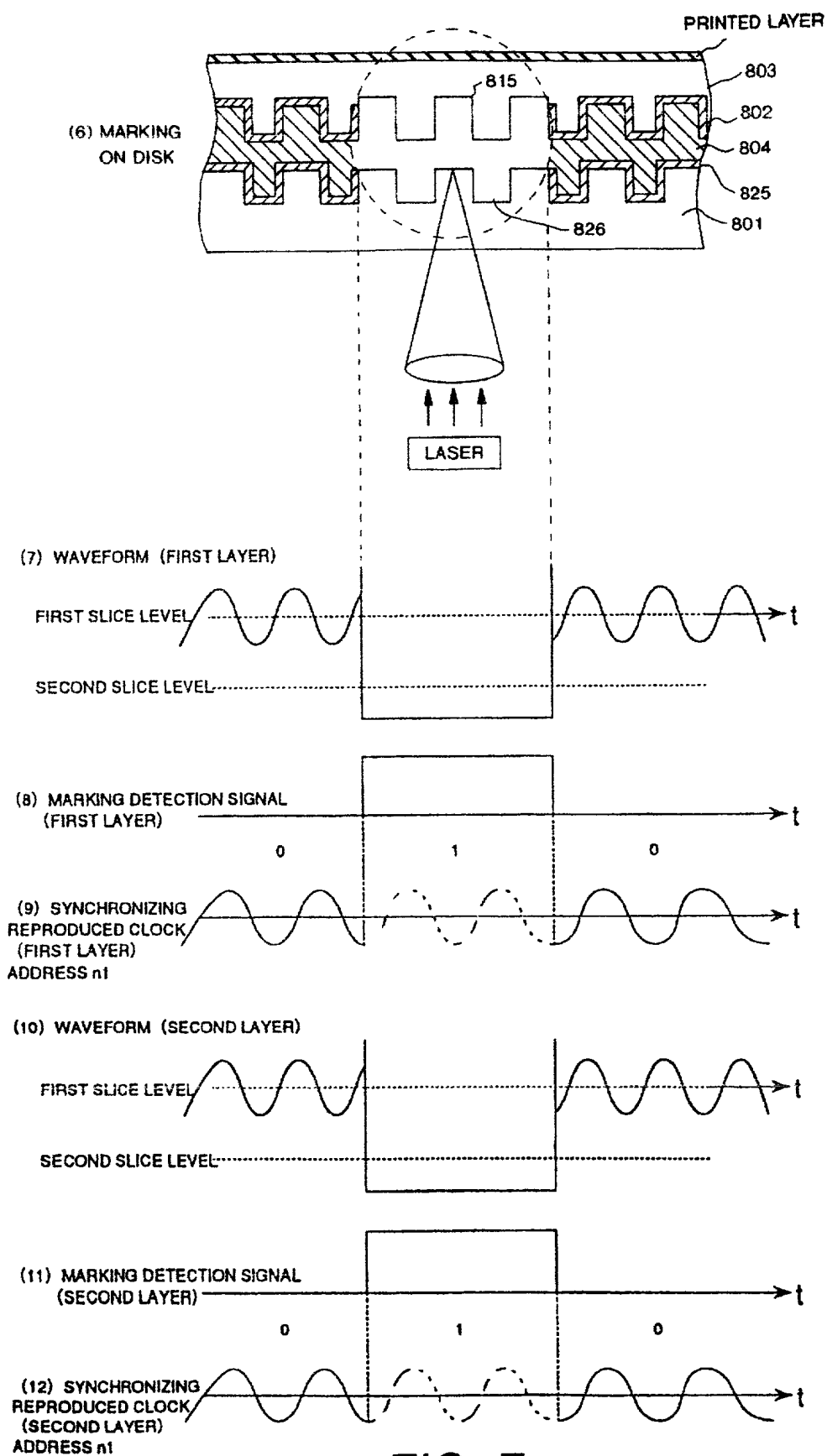


FIG. 7

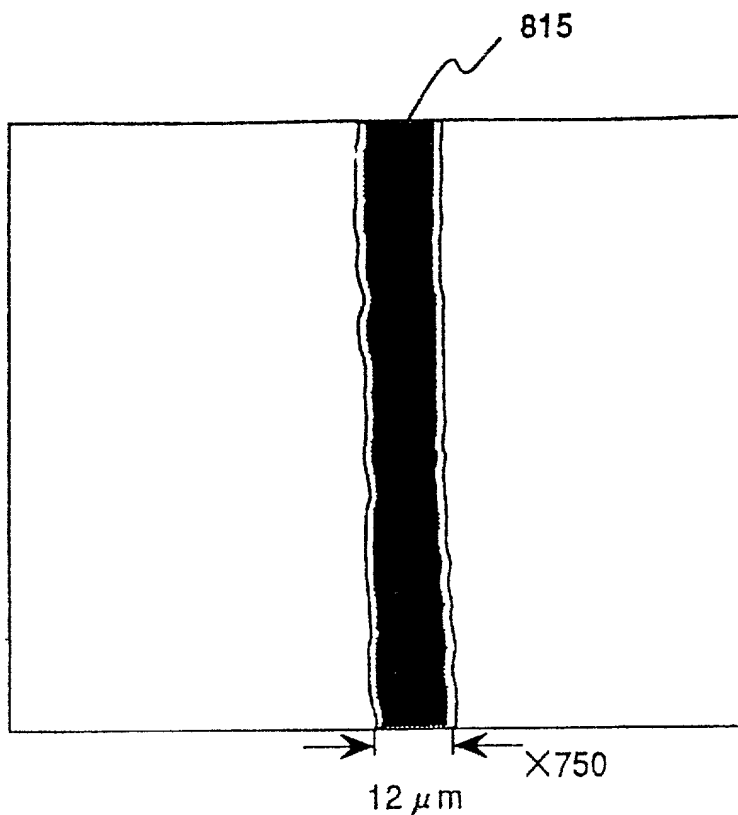


FIG. 8A

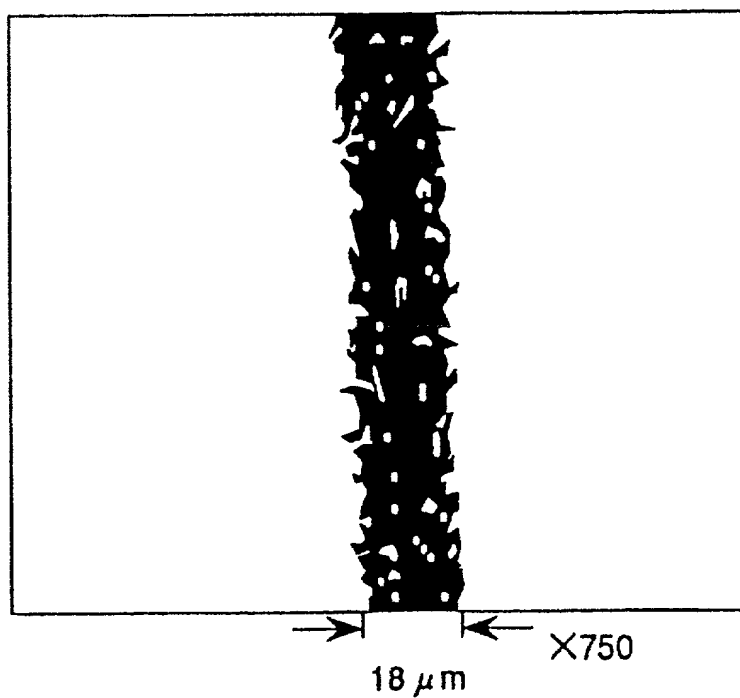
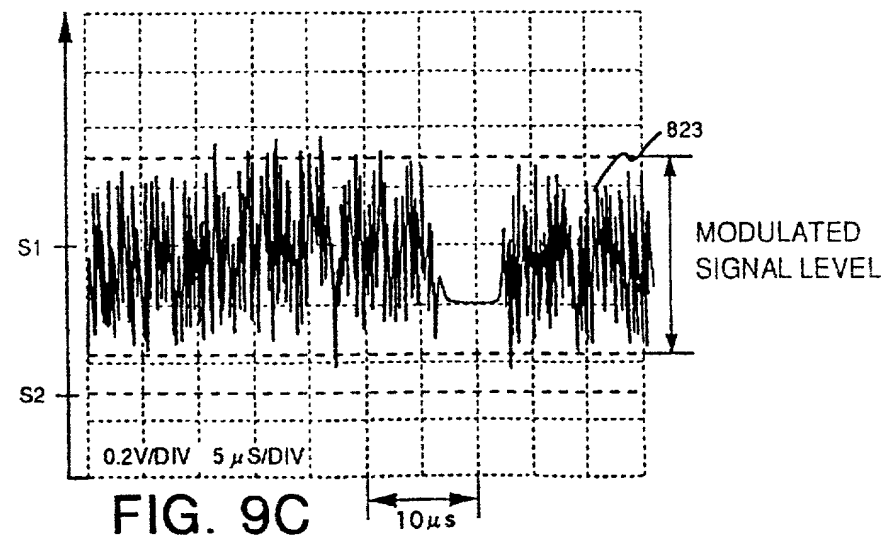
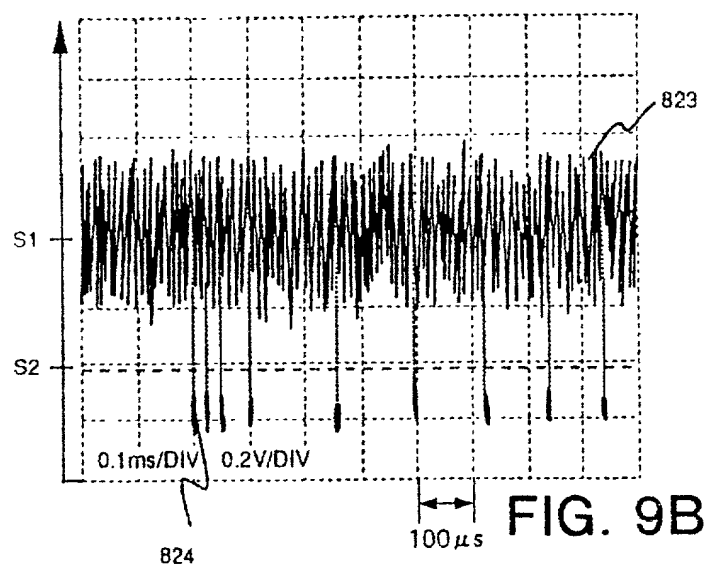
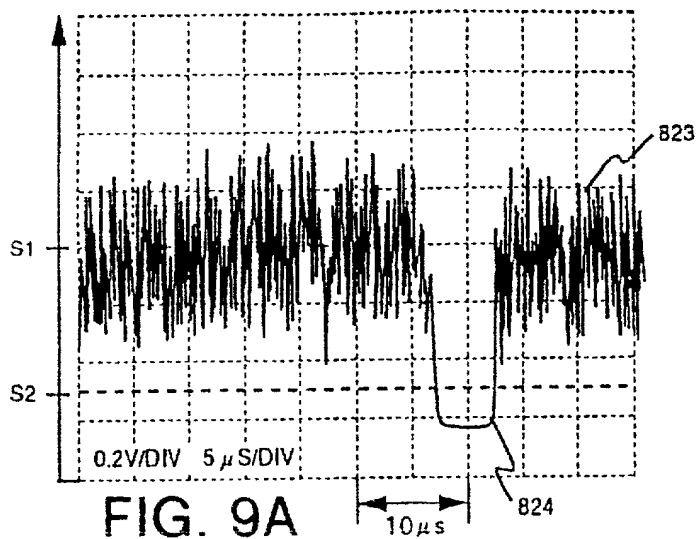


FIG. 8B





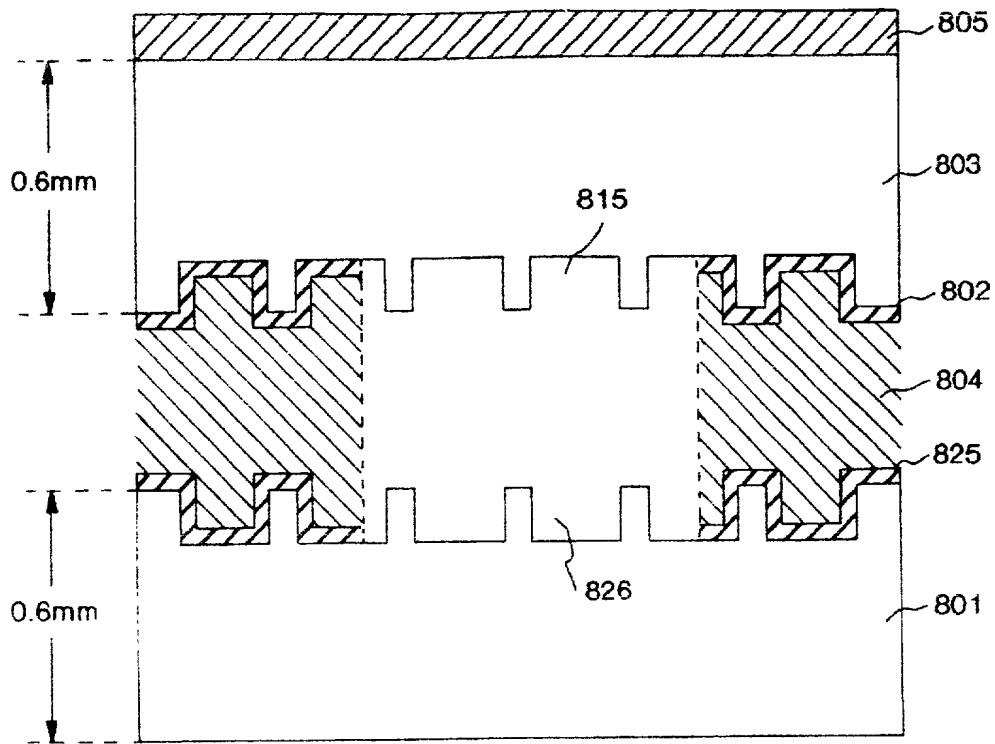


FIG. 10A

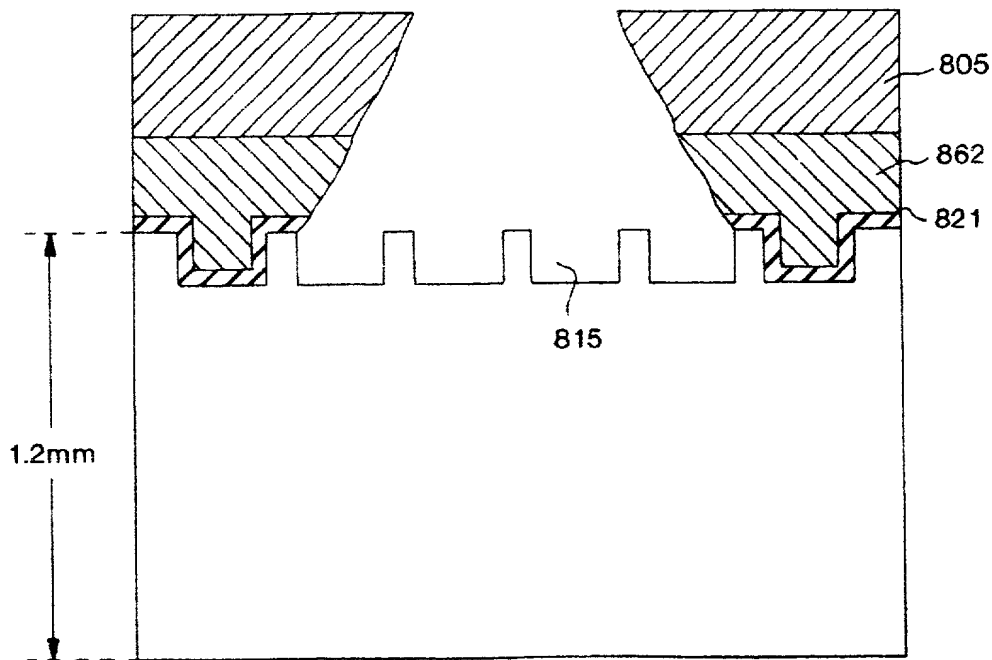


FIG. 10B

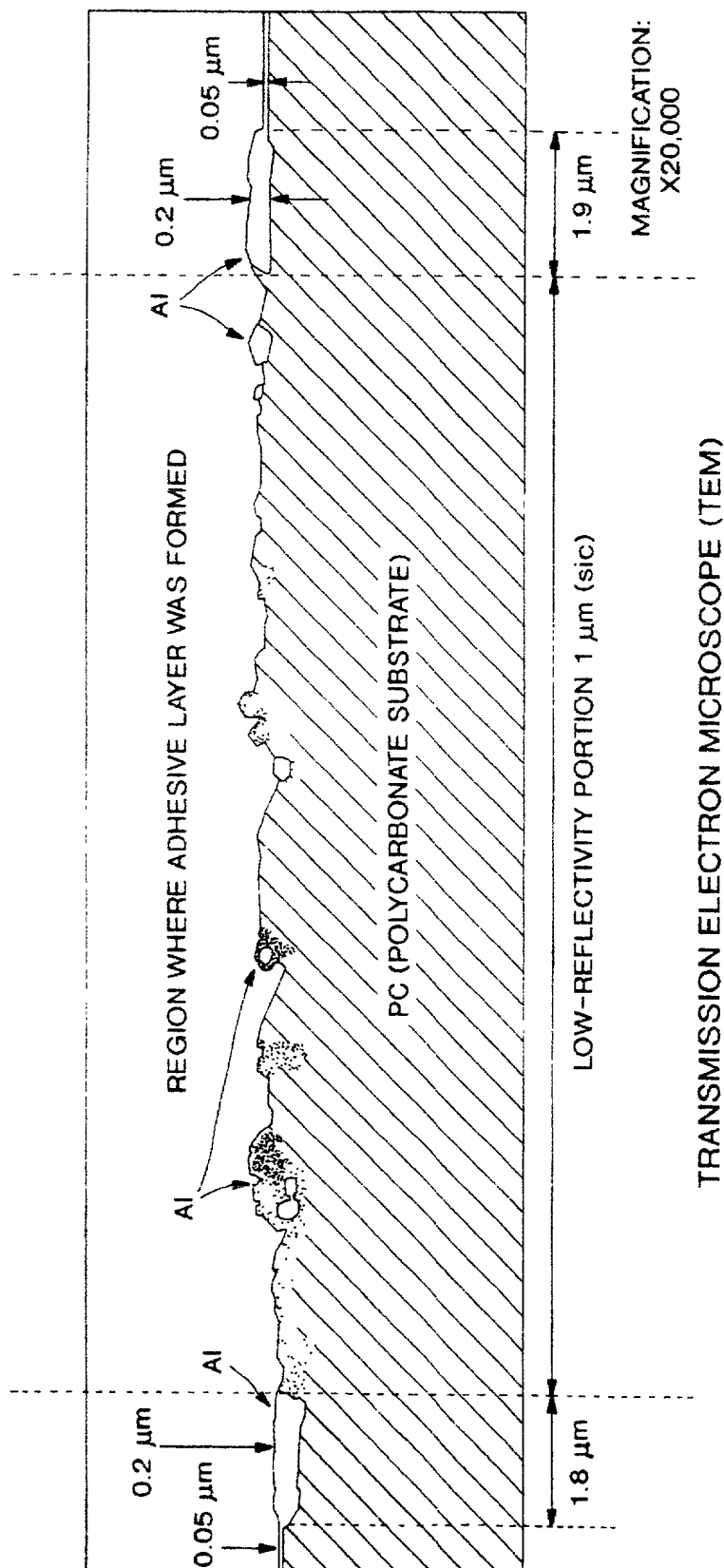


FIG. 11

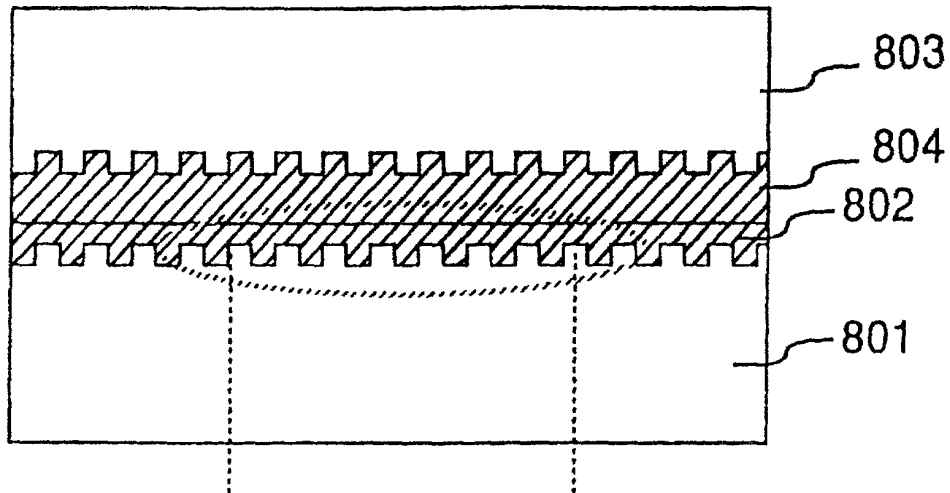


FIG. 12A

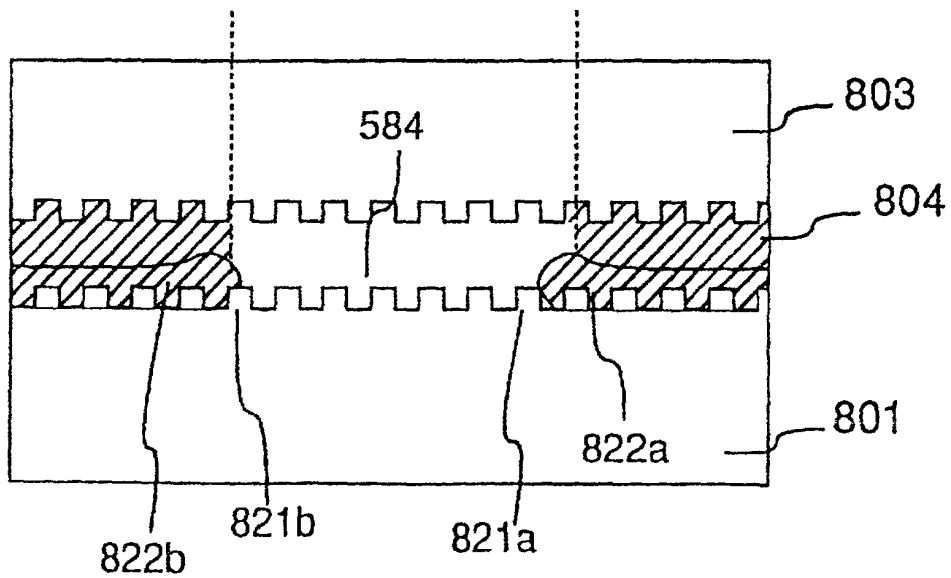


FIG. 12B

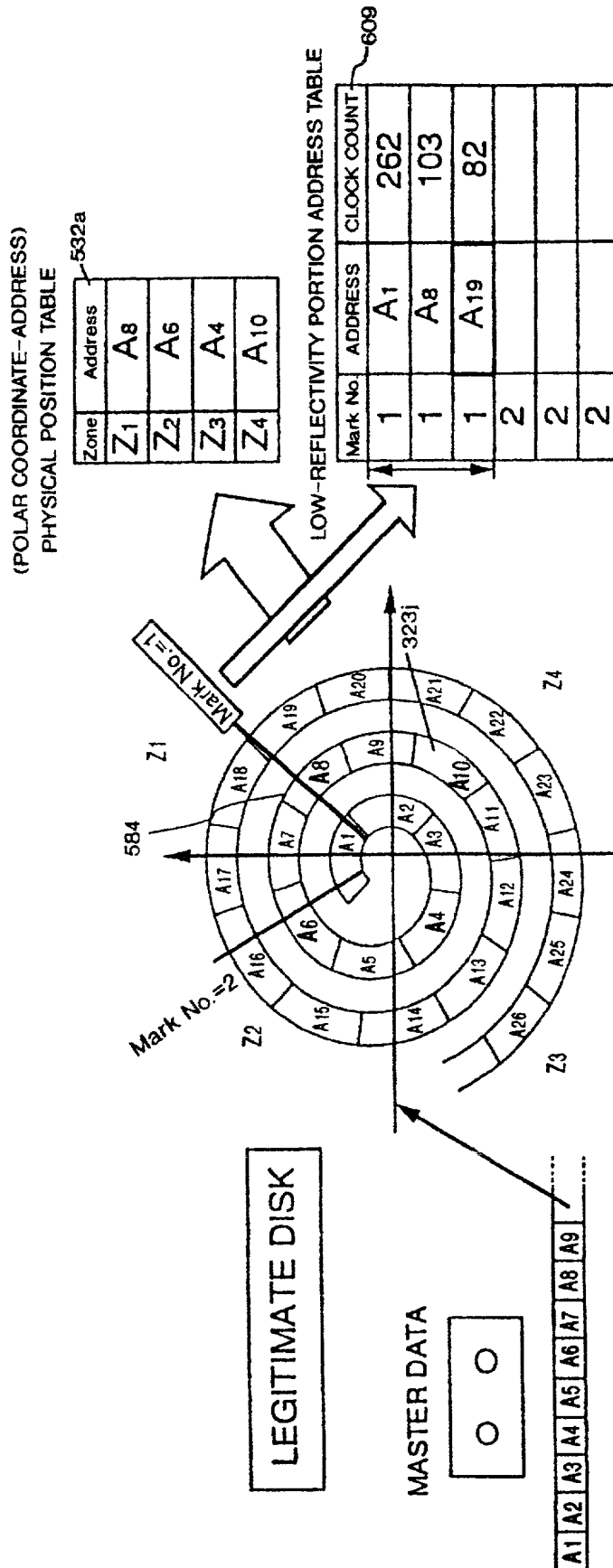


FIG. 13A

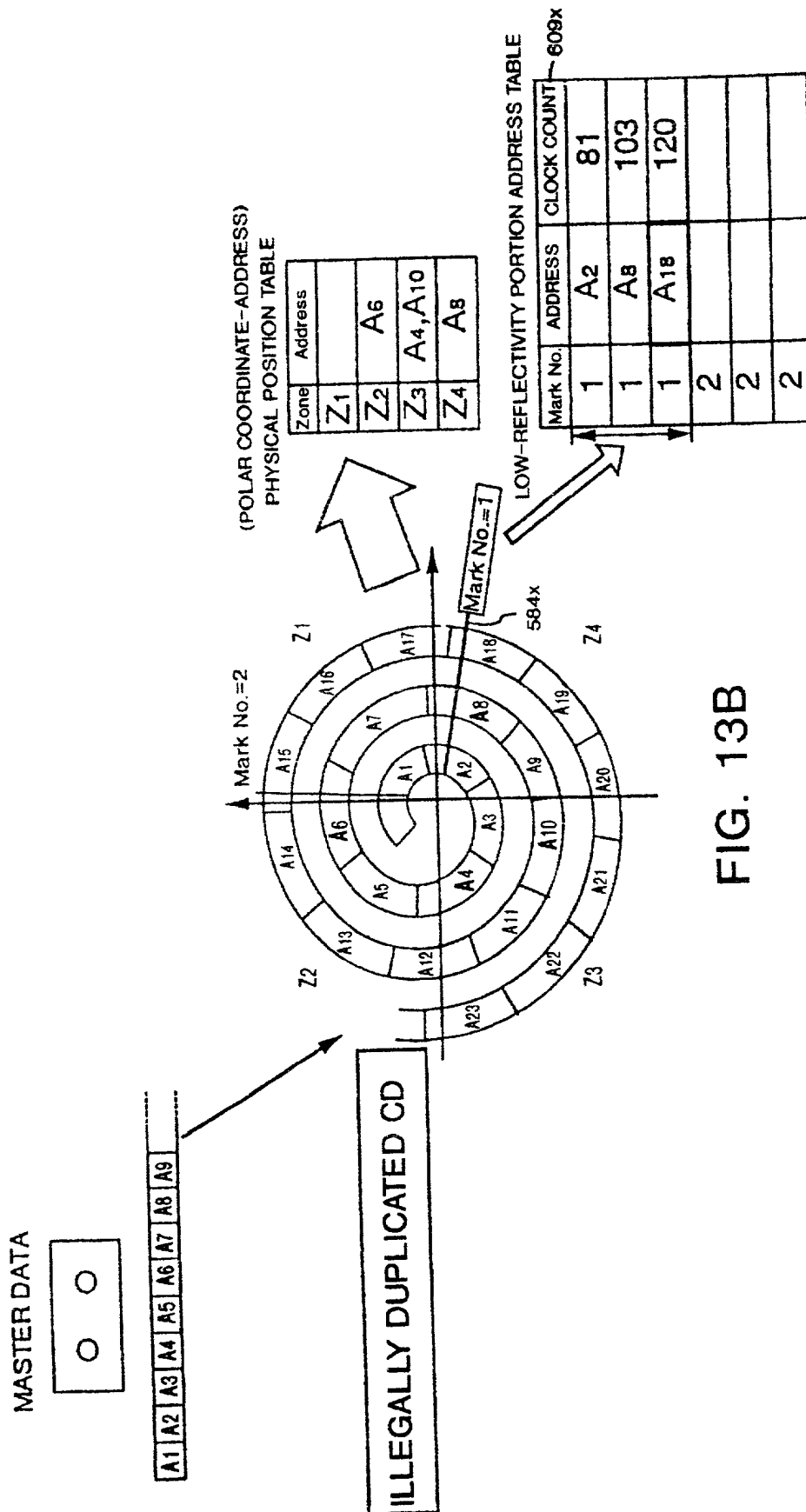


FIG. 13B

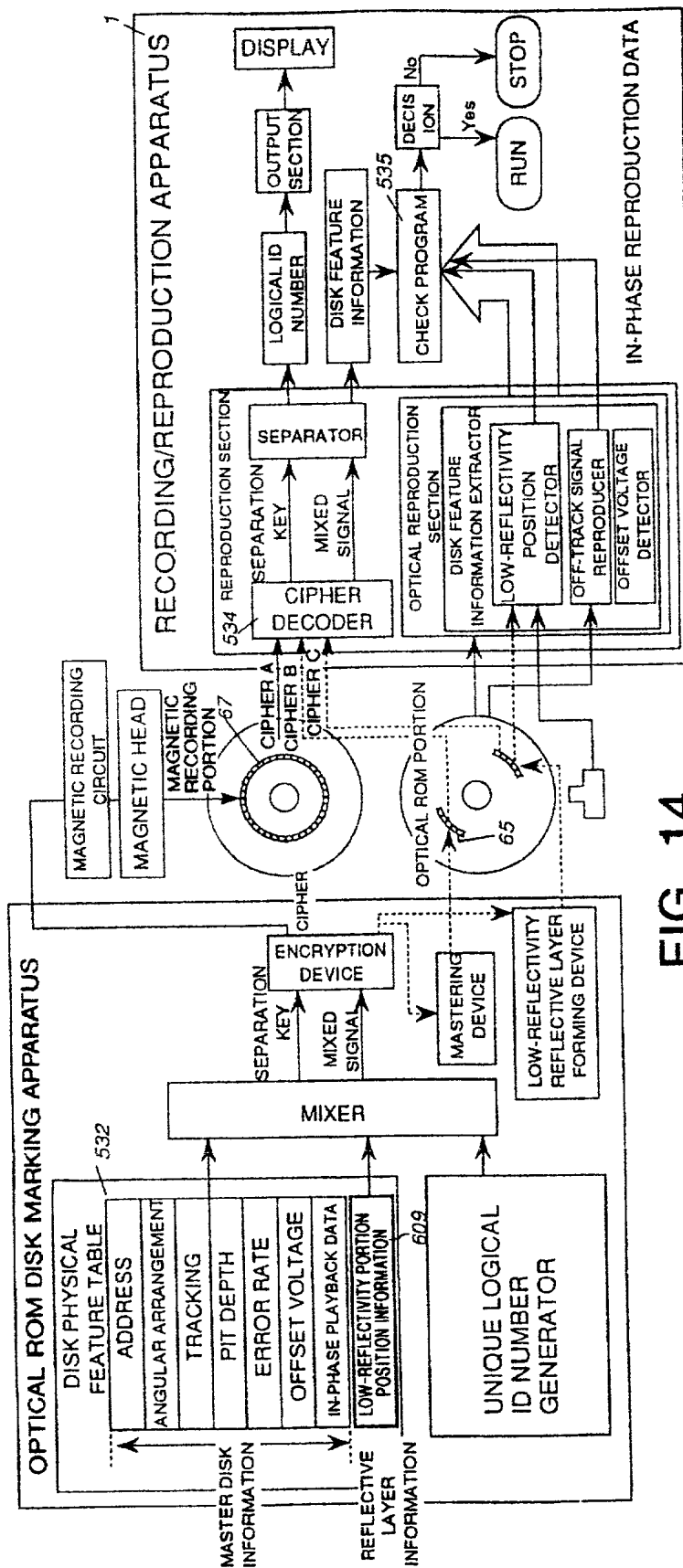


FIG. 14

# FIG. 15

The diagram illustrates a system for detecting the position of a low-reflectivity portion on a disk. The system is divided into several main functional blocks:

- Optical Sensor and Rotation Mark Detection (800):** An optical sensor receives an optical playback signal, which is filtered by a high-pass filter (HPF) and then an AGC (Automatic Gain Control) block. The signal is then processed by a waveform shaping circuit (590a) and a level slicer (first slice level). The output of the level slicer is fed into a clock regenerator (38a) and a demodulator (EFM) (591). The demodulator also receives a SEBCODE SIGNAL (591) and outputs a DEMODULATED CLOCK (592).
- Low-Reflectivity Position Detector (586):** This block includes a low-reflectivity light amount detector (587) and a light amount comparator (level slicer) (588). The comparator compares the light amount detector's output with a light amount reference value (second slice level) to generate a LOW-REFLECTIVITY PORTION DETECTION SIGNAL (587).
- Address and Synchronization Sections (593):** The LOW-REFLECTIVITY PORTION DETECTION SIGNAL (587) is fed into the ADDRESS OUTPUT SECTION (594) and the SYNCHRONIZING SIGNAL OUTPUT SECTION (595). The ADDRESS OUTPUT SECTION outputs an ADDRESS SIGNAL (596), and the SYNCHRONIZING SIGNAL OUTPUT SECTION outputs a SYNC DATA CLOCK (598b).
- Low-Reflectivity Portion Position Section (599):** This section includes a LOW-REFLECTIVITY PORTION START/END POSITION DETECTOR (599) and a LOW-REFLECTIVITY PORTION ADDRESS/CLOCK NUMBER POSITION SIGNAL OUTPUT SECTION (599). The ADDRESS SIGNAL (596) is fed into the ADDRESS/CLOCK NUMBER POSITION SIGNAL OUTPUT SECTION (599), which outputs an ADDRESS/CLOCK NUMBER POSITION SIGNAL (599).
- Time Delay Correction and Storing (607, 608):** The ADDRESS/CLOCK NUMBER POSITION SIGNAL (599) is fed into a TIME DELAY CORRECTOR REFERENCE DELAY TIME TO MEASURING SECTION (607) and a CIRCUIT DELAY TIME STORING SECTION (608).
- Second Low-Reflectivity Portion Signal Demodulator (598c):** This block includes a SECOND LOW-REFLECTIVITY PORTION DETECTION SIGNAL INPUT SECTION (598c), a SECOND LOW-REFLECTIVITY PORTION INTERVAL DETECTING MEANS (598c), and a SECOND LOW-REFLECTIVITY PORTION PULSE WIDTH DETECTING MEANS (598c). The ADDRESS/CLOCK NUMBER POSITION SIGNAL (599) is fed into the SECOND LOW-REFLECTIVITY PORTION DETECTION SIGNAL INPUT SECTION (598c), which outputs a DEMODULATED CLOCK [COUNTER] REPRODUCER (598c).
- Demodulator and Comparing Means (534):** The DEMODULATED CLOCK [COUNTER] REPRODUCER (598c) is fed into a DEMODULATOR (534). The DEMODULATOR outputs a LOW-REFLECTIVITY PORTION ANGULAR POSITION SIGNAL (598c) and a LOW-REFLECTIVITY PORTION ANGULAR POSITION DETECTOR (598c). The LOW-REFLECTIVITY PORTION ANGULAR POSITION DETECTOR (598c) outputs a LOW-REFLECTIVITY PORTION ANGULAR POSITION SIGNAL (598c).
- Output and ID Number Section (750):** The LOW-REFLECTIVITY PORTION ANGULAR POSITION SIGNAL (598c) is fed into a COMPARING MEANS (534), which outputs a LOW-REFLECTIVITY PORTION ANGULAR POSITION SIGNAL (598c). The COMPARING MEANS (534) is also fed into a CIPHER DECODER (534), which outputs an ID NUMBER OUTPUT SECTION (750).

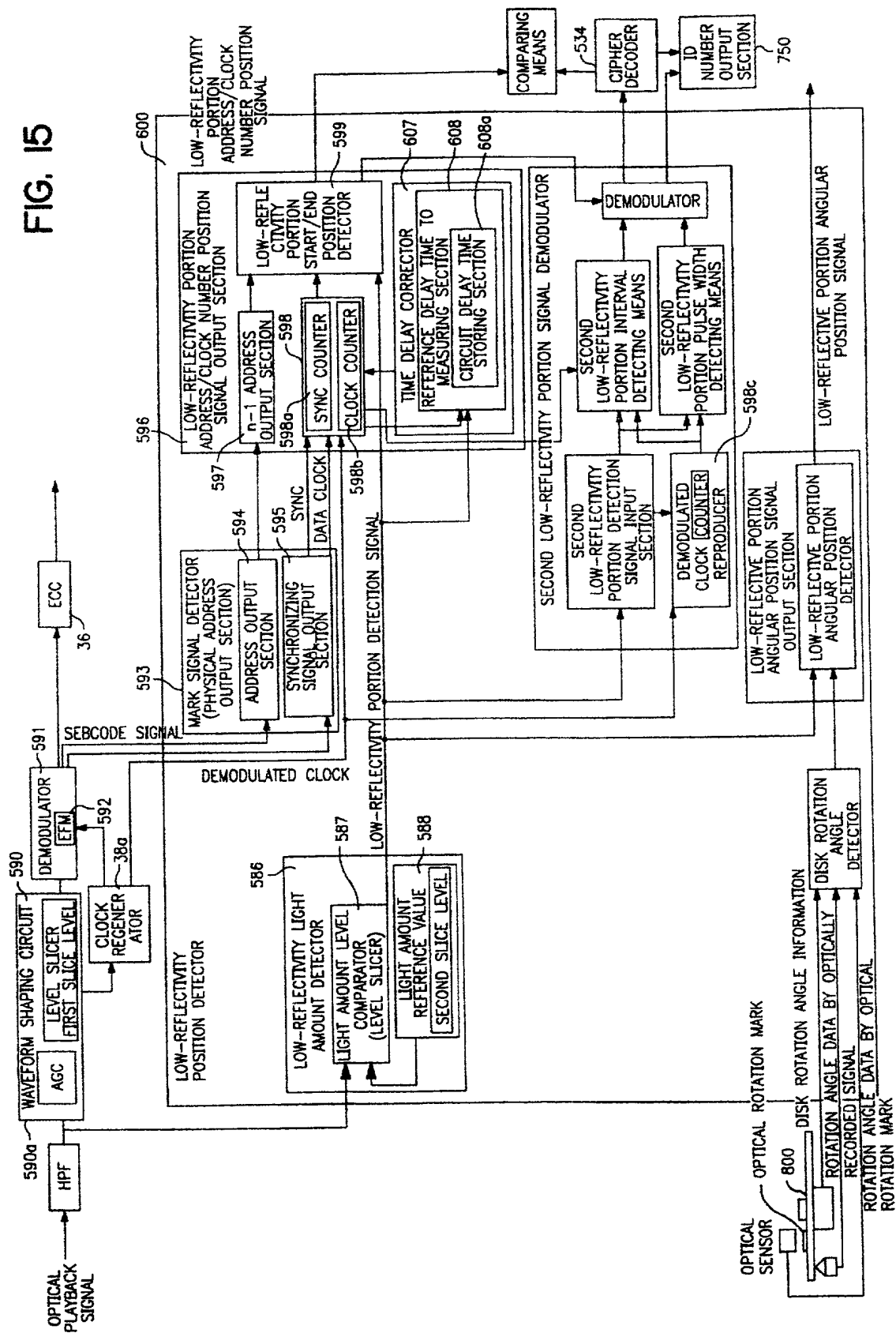
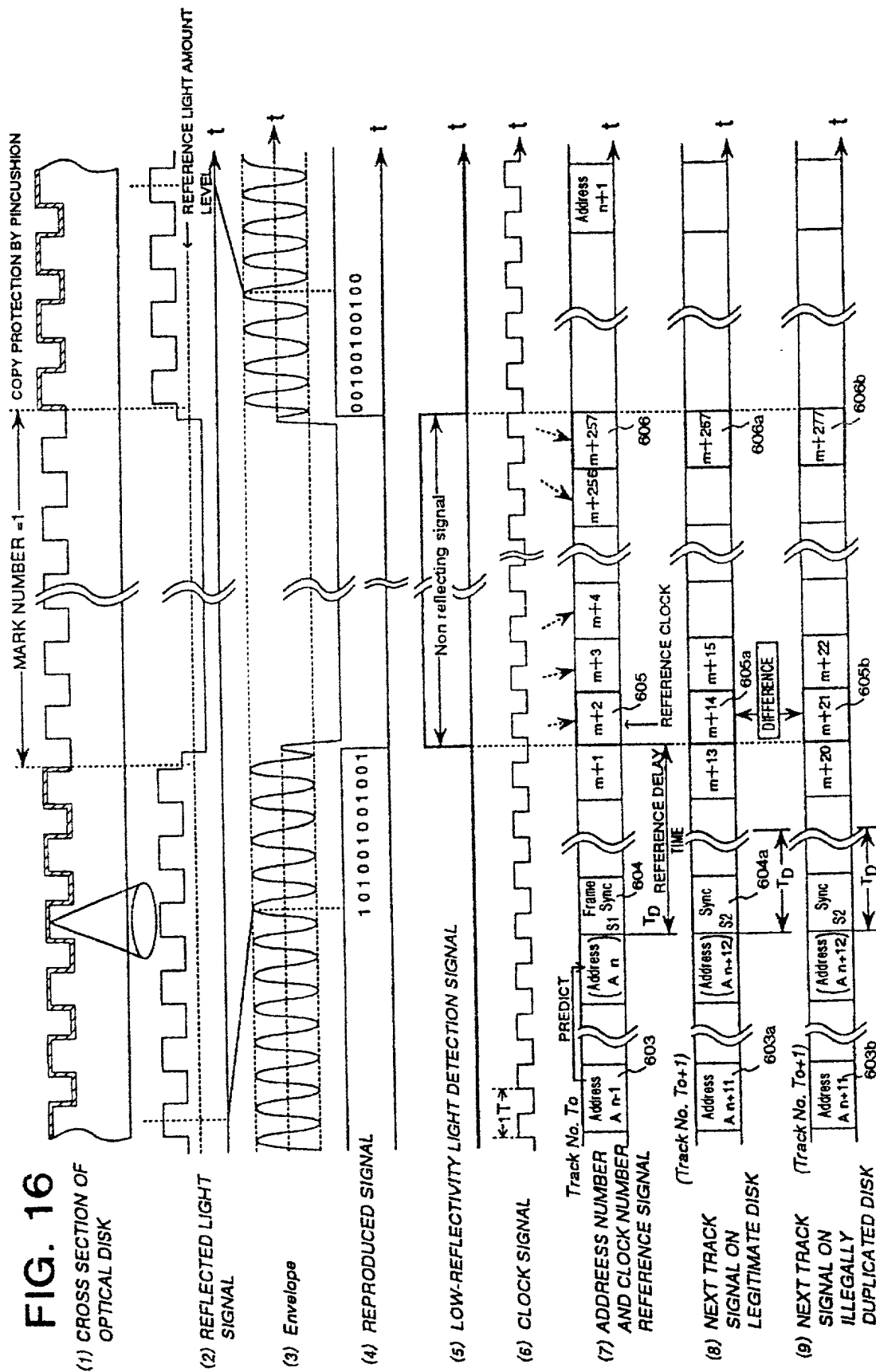




FIG. 16

(1) CROSS SECTION OF OPTICAL DISK



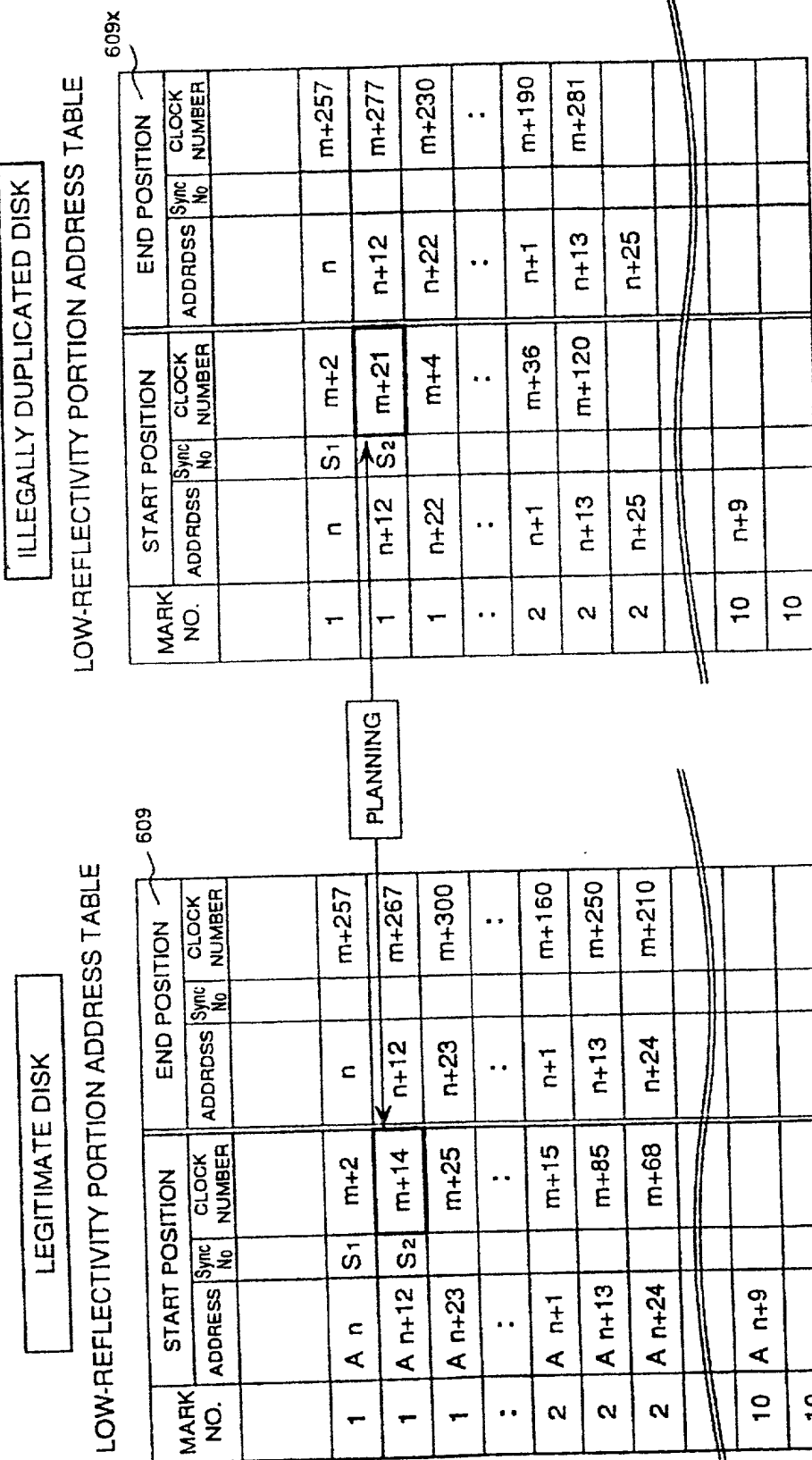


FIG. 17

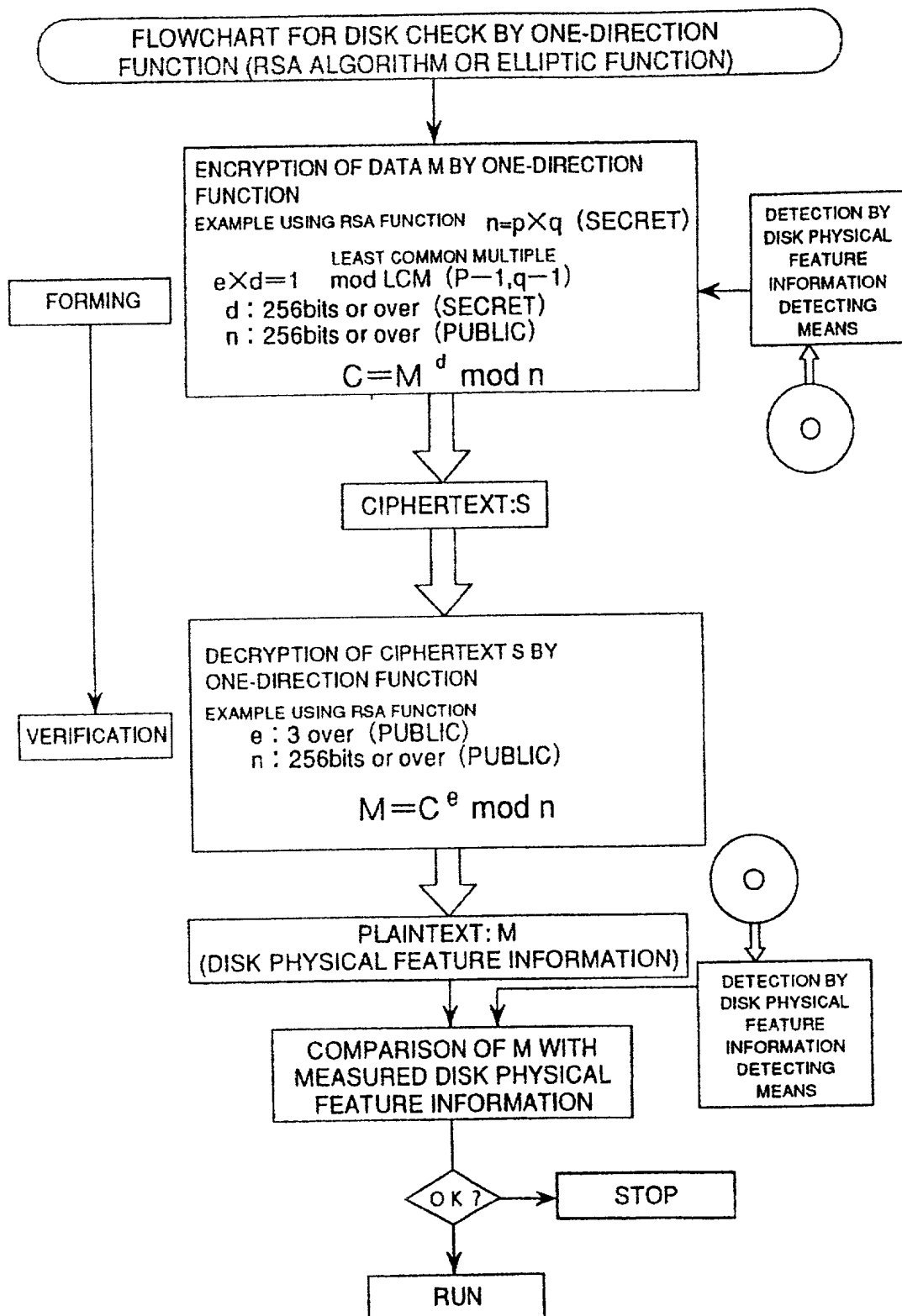


FIG. 18

DIAGRAM SHOWING DIFFERENT PHYSICAL LOCATIONS OF LOGICAL ADDRESSES ON DIFFERENT MASTER DISKS

PHYSICAL LOCATIONS OF THE SAME LOGICAL ADDRESSES ON MASTER DISKS PRODUCED ON DIFFERENT DAYS

FIRST MASTER DISK ○ CLV=1.231m/sec(SRC##2 MISI)

SECOND MASTER DISK ● CLV=1.245m/sec(FZ-SJ1951A 3)

THIRD MASTER DISK ▲ CLV=1.308m/sec(FZ-SJ1951AT 8)

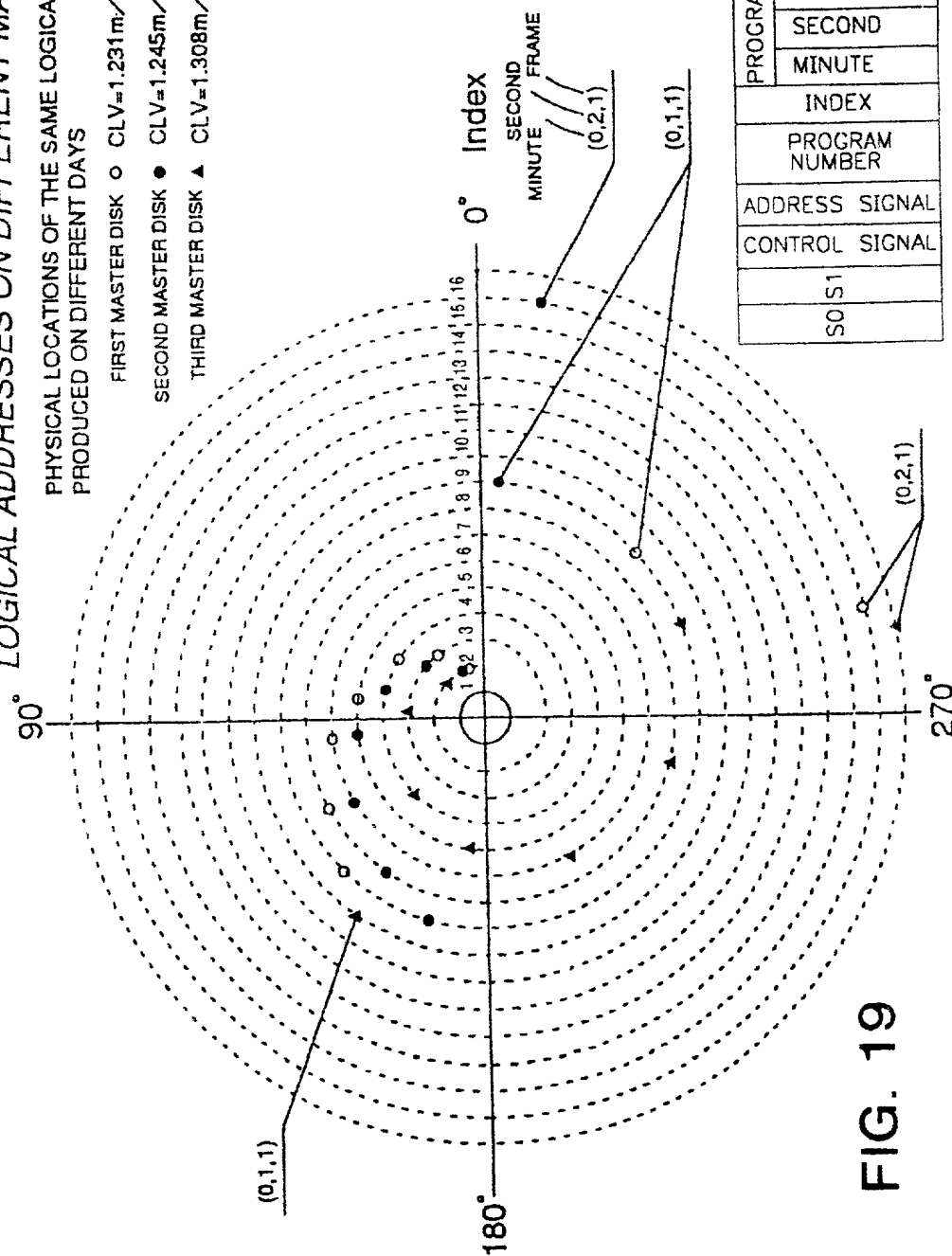
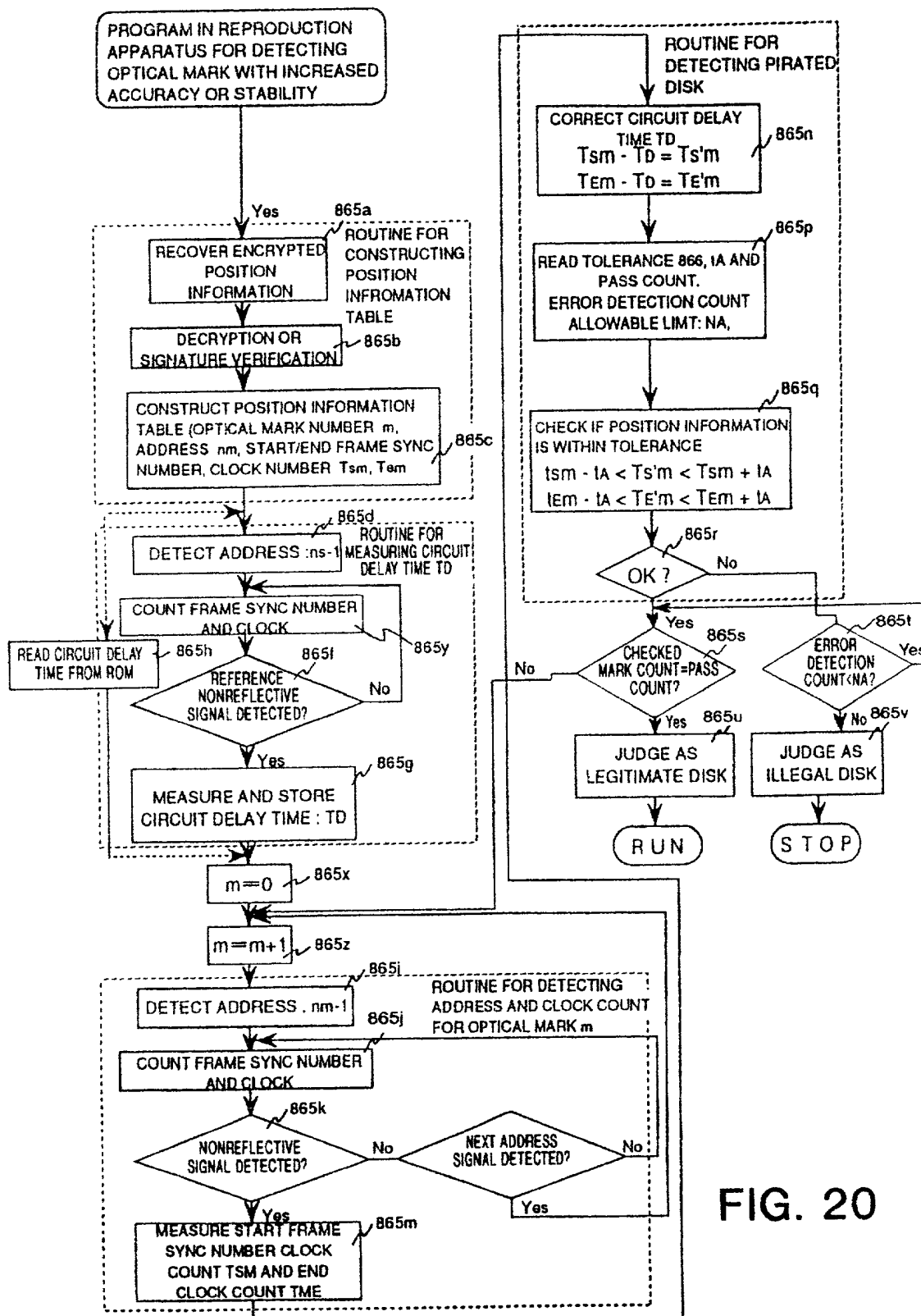


FIG. 19



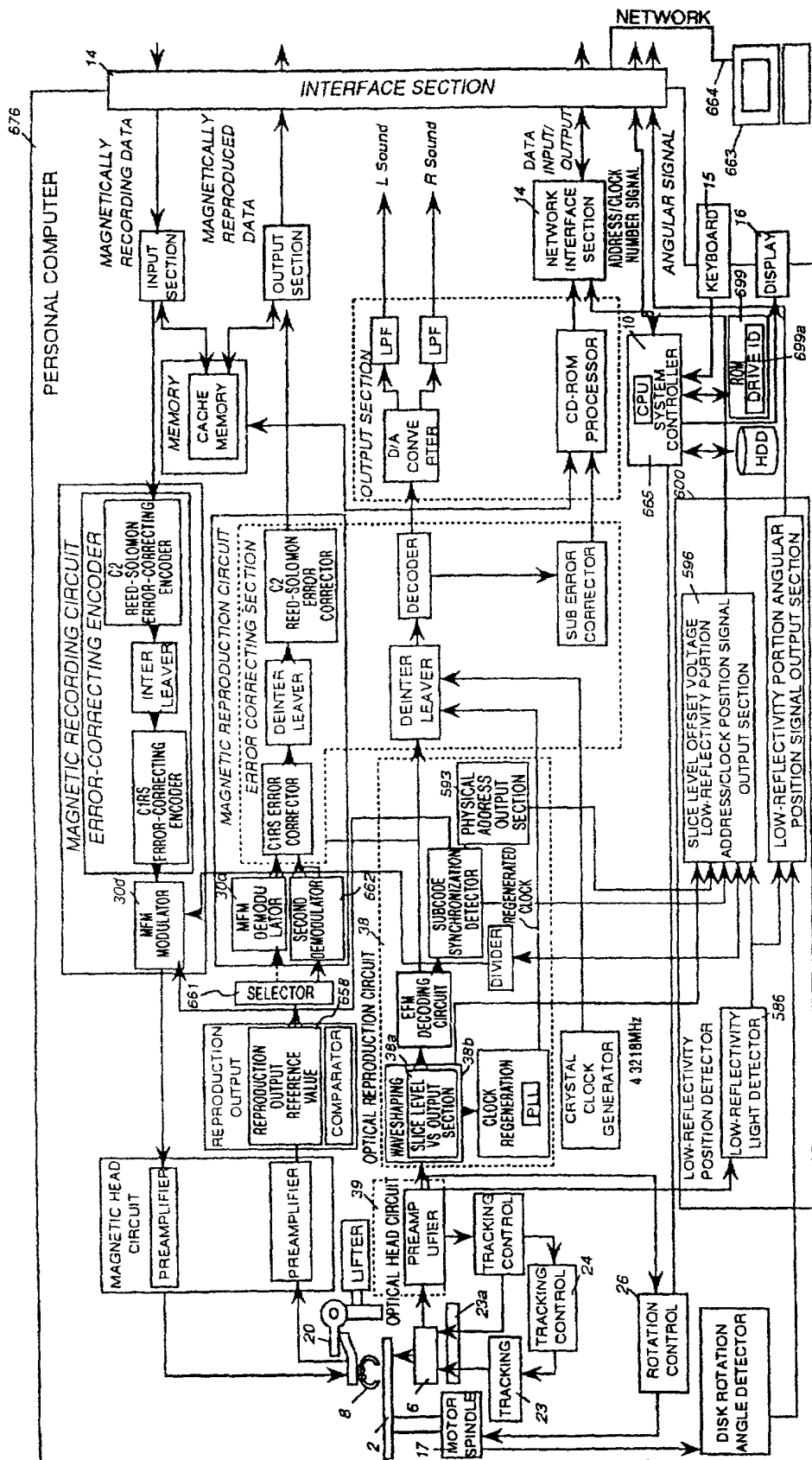
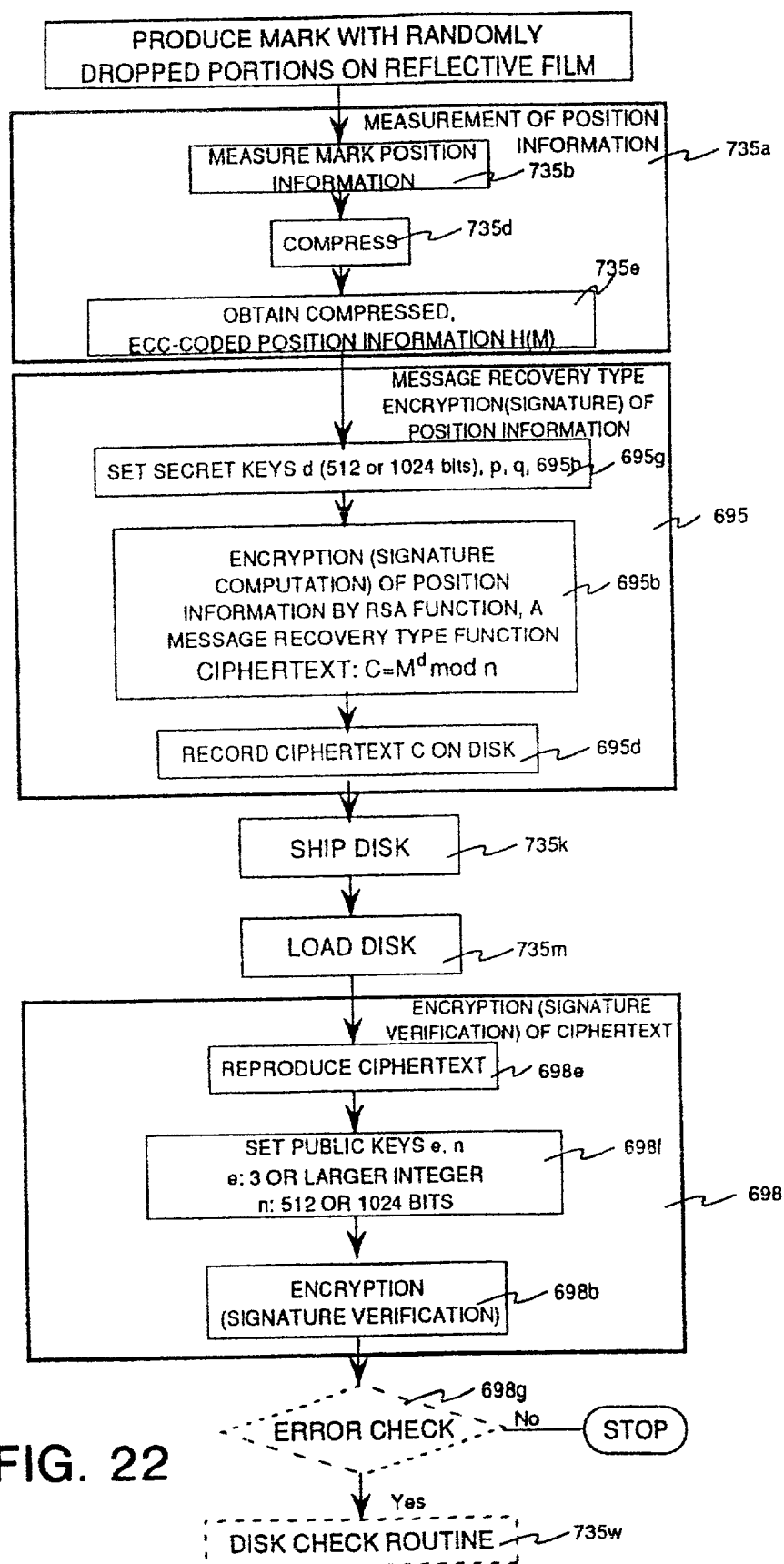


FIG. 21



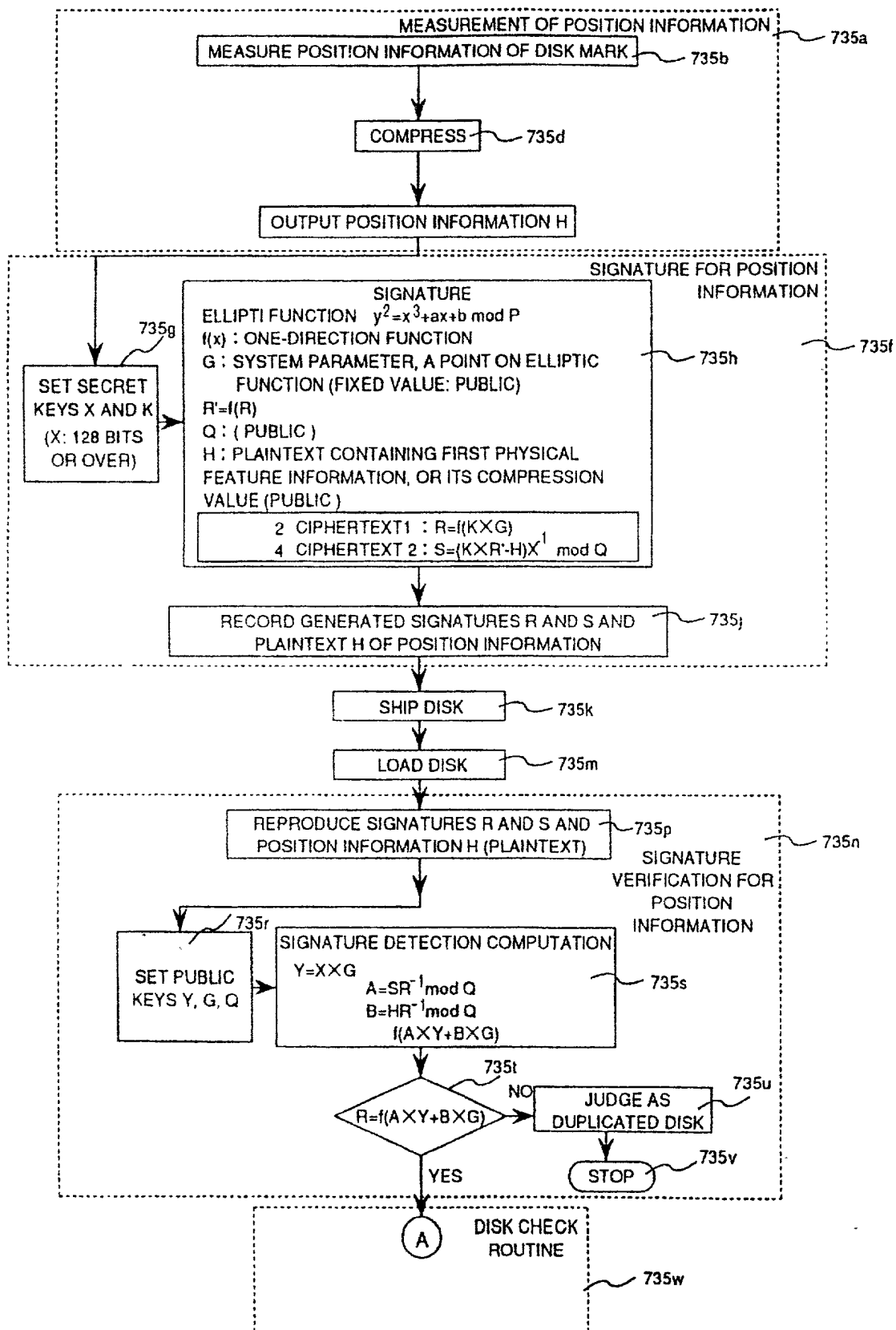


FIG. 23



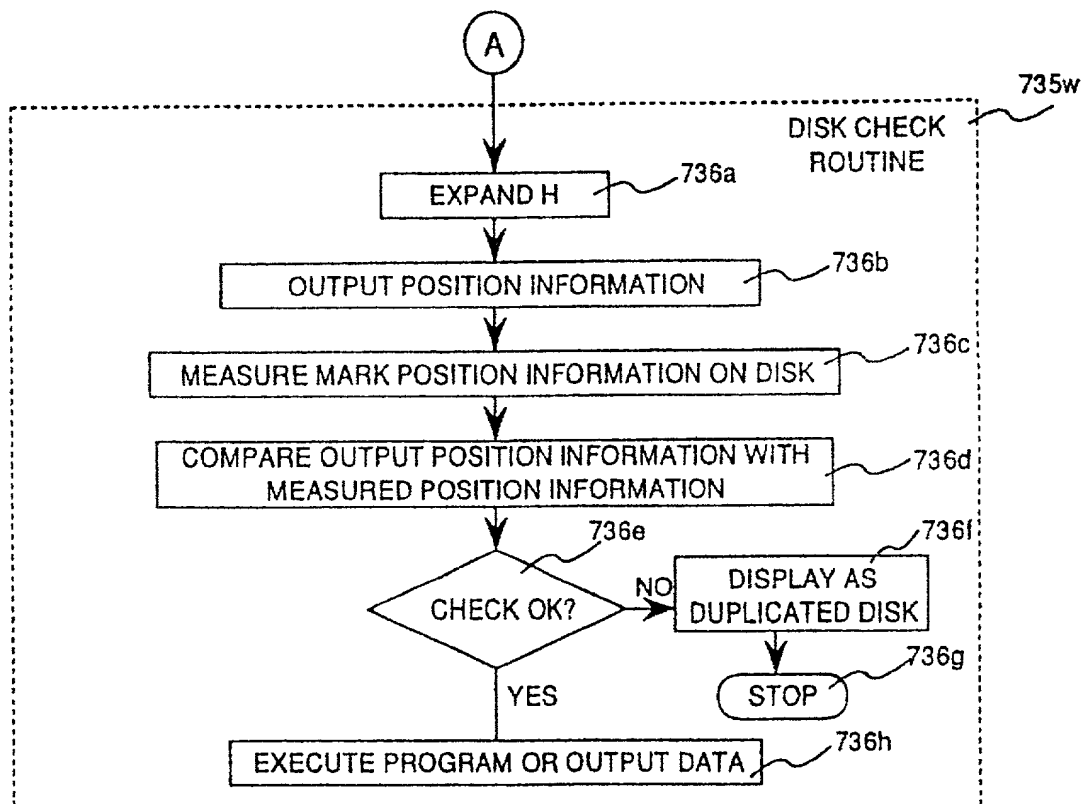


FIG. 24

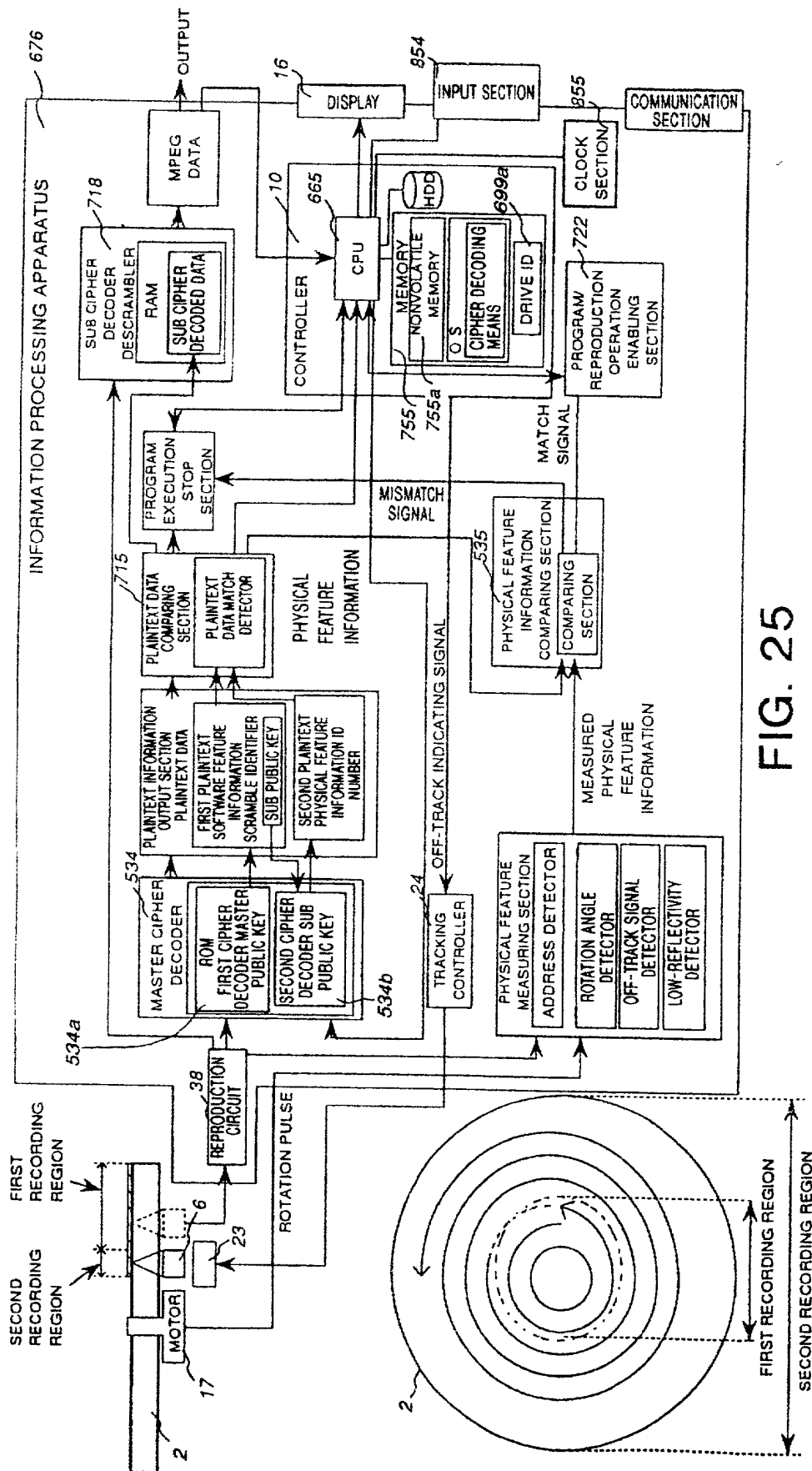
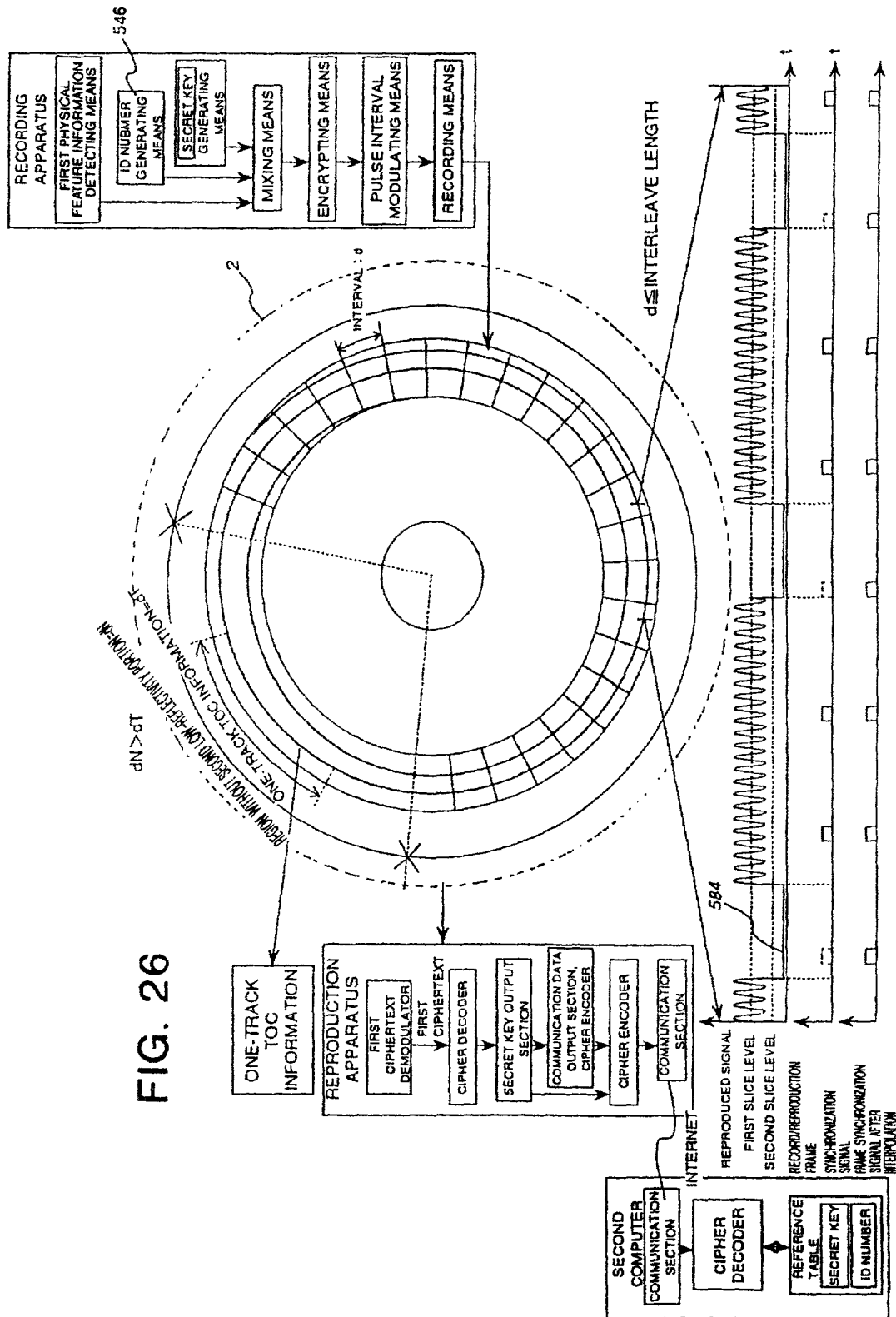
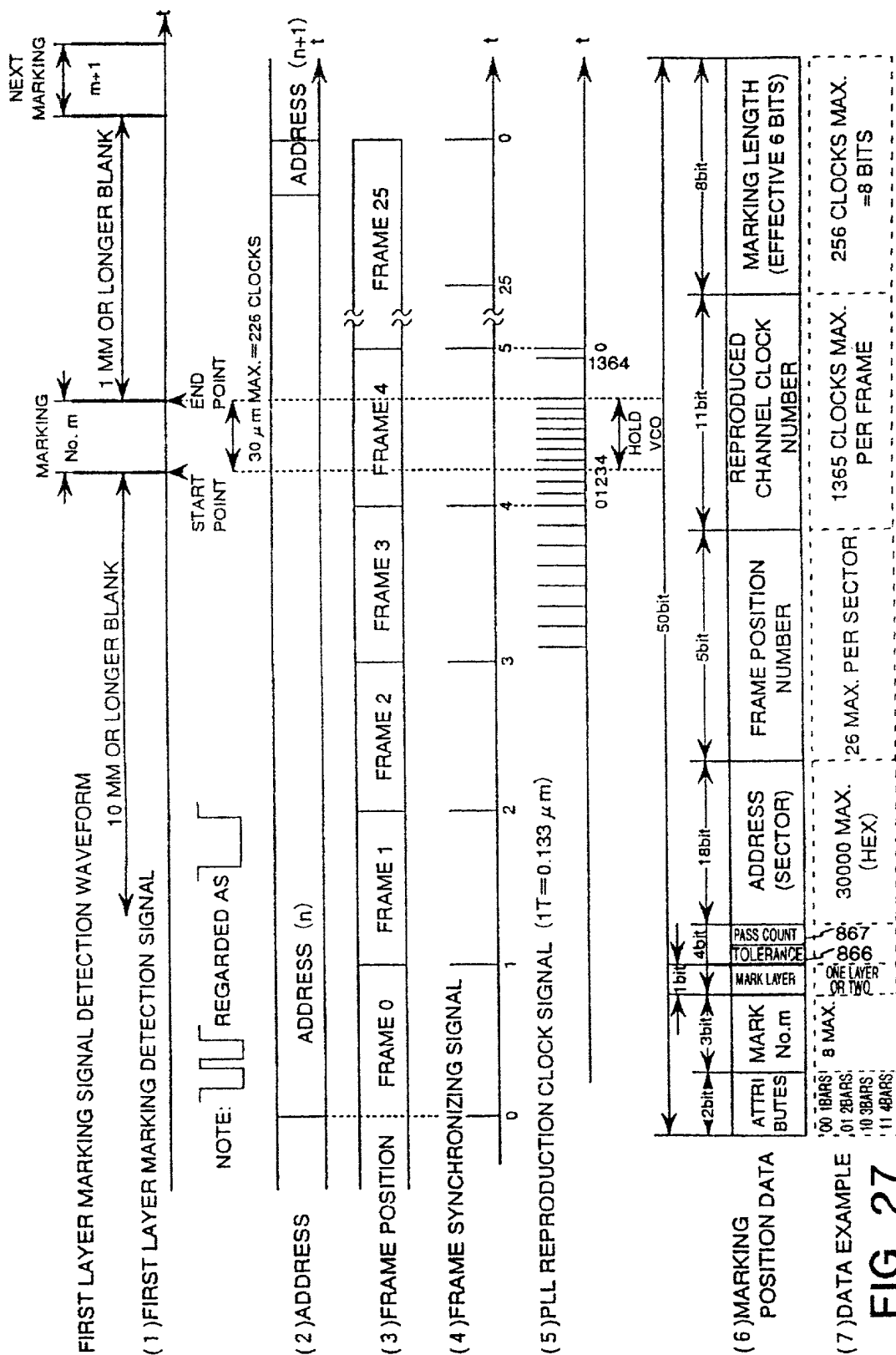
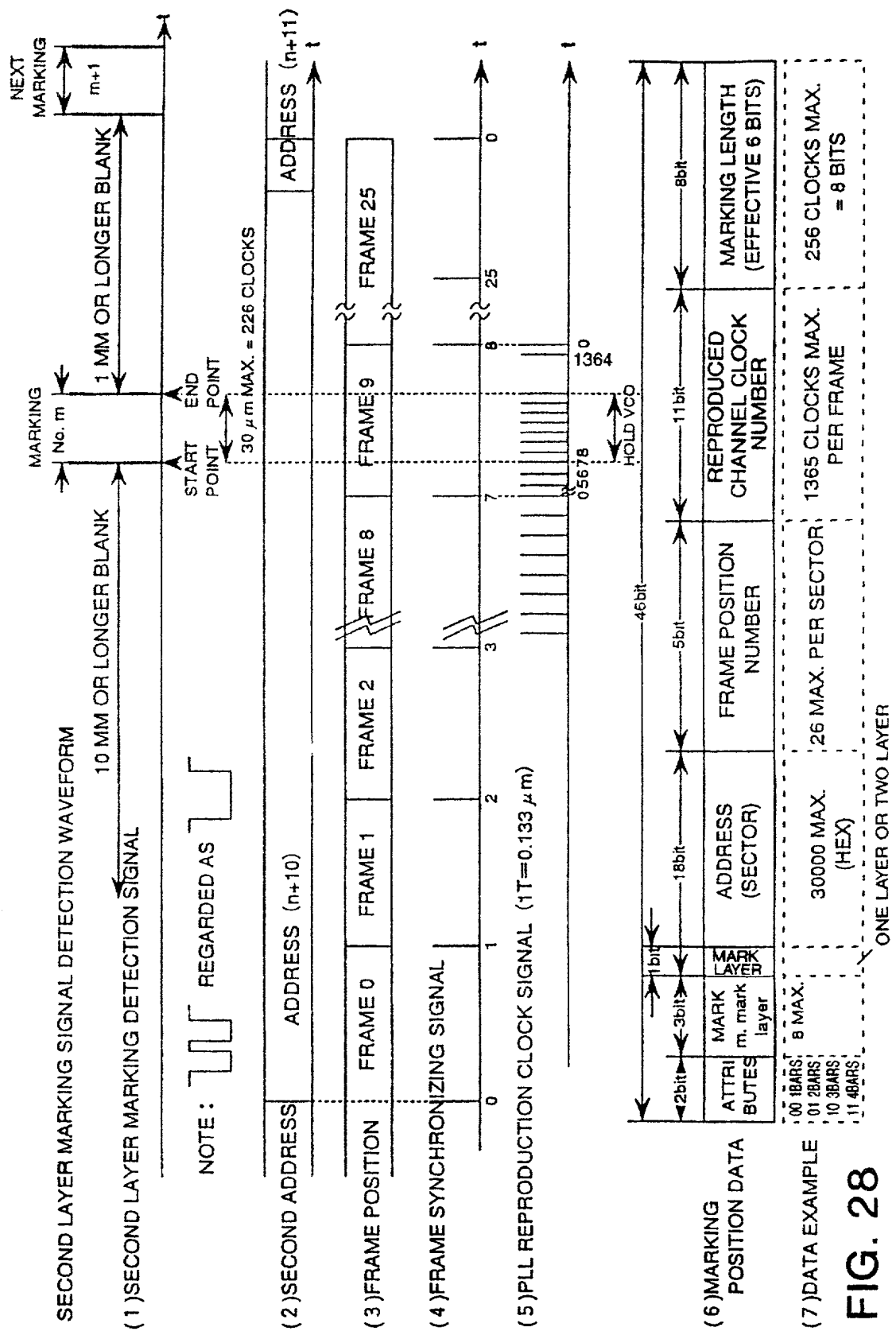


FIG. 25

FIG. 26







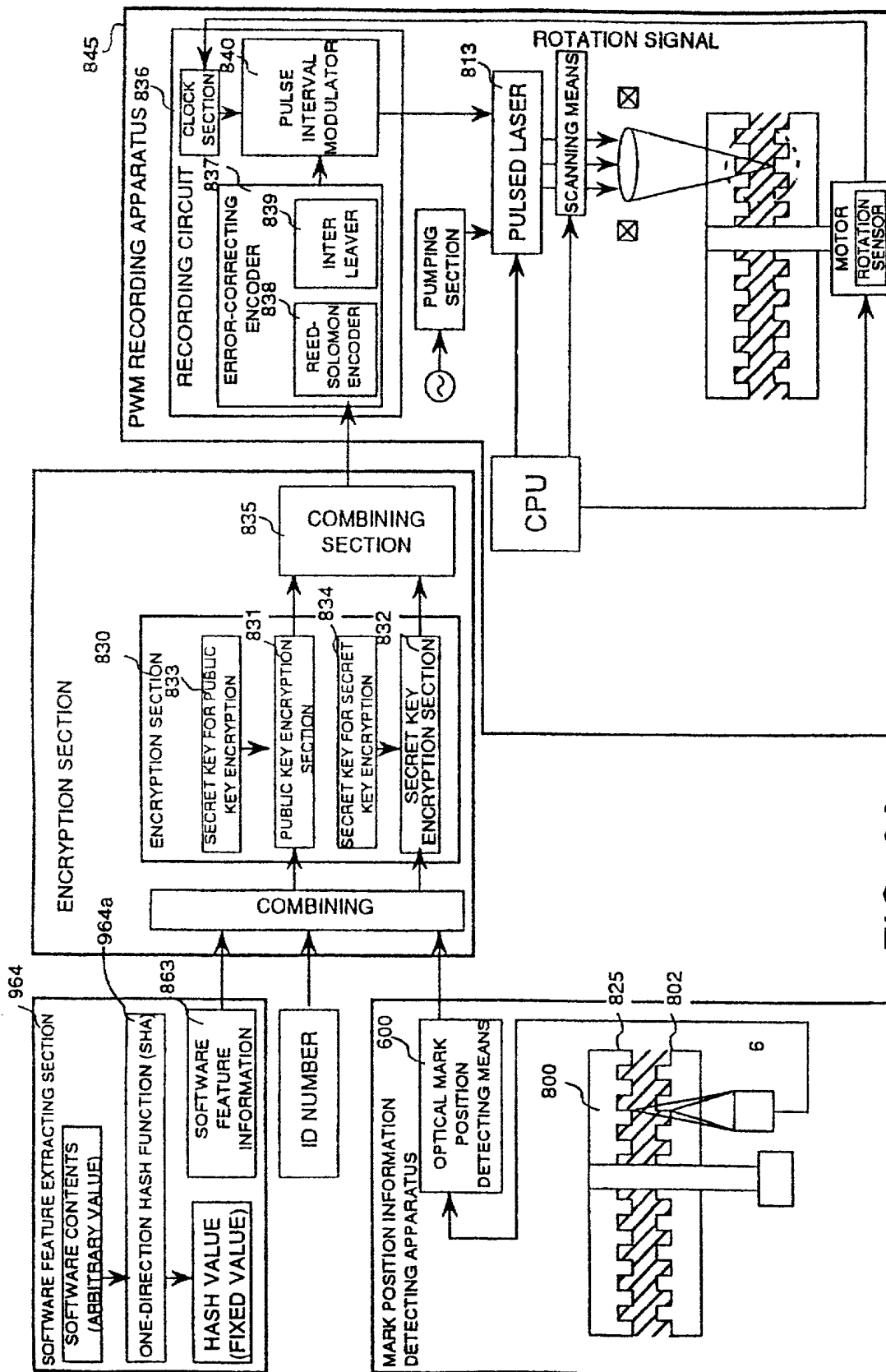
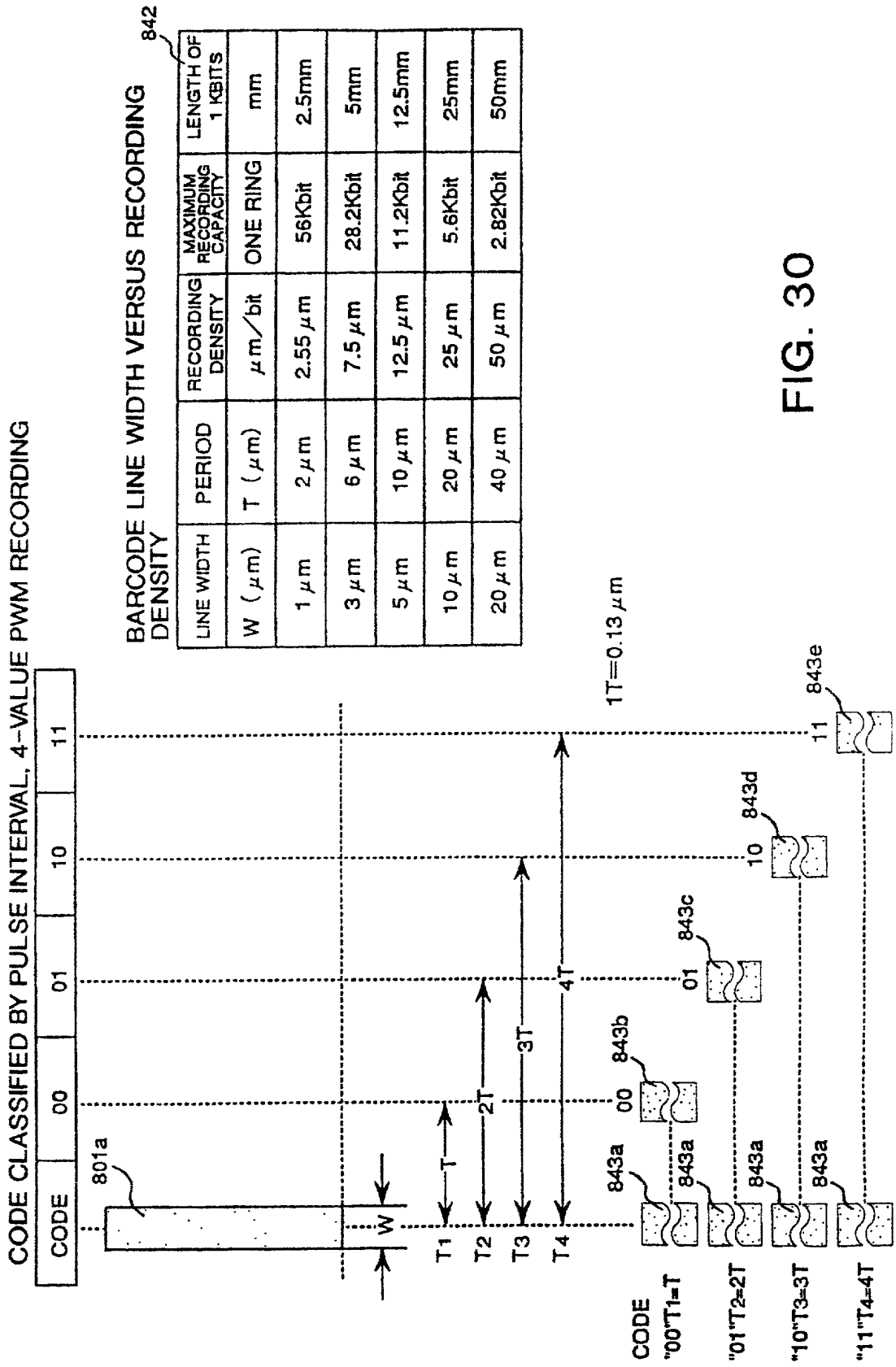


FIG. 29



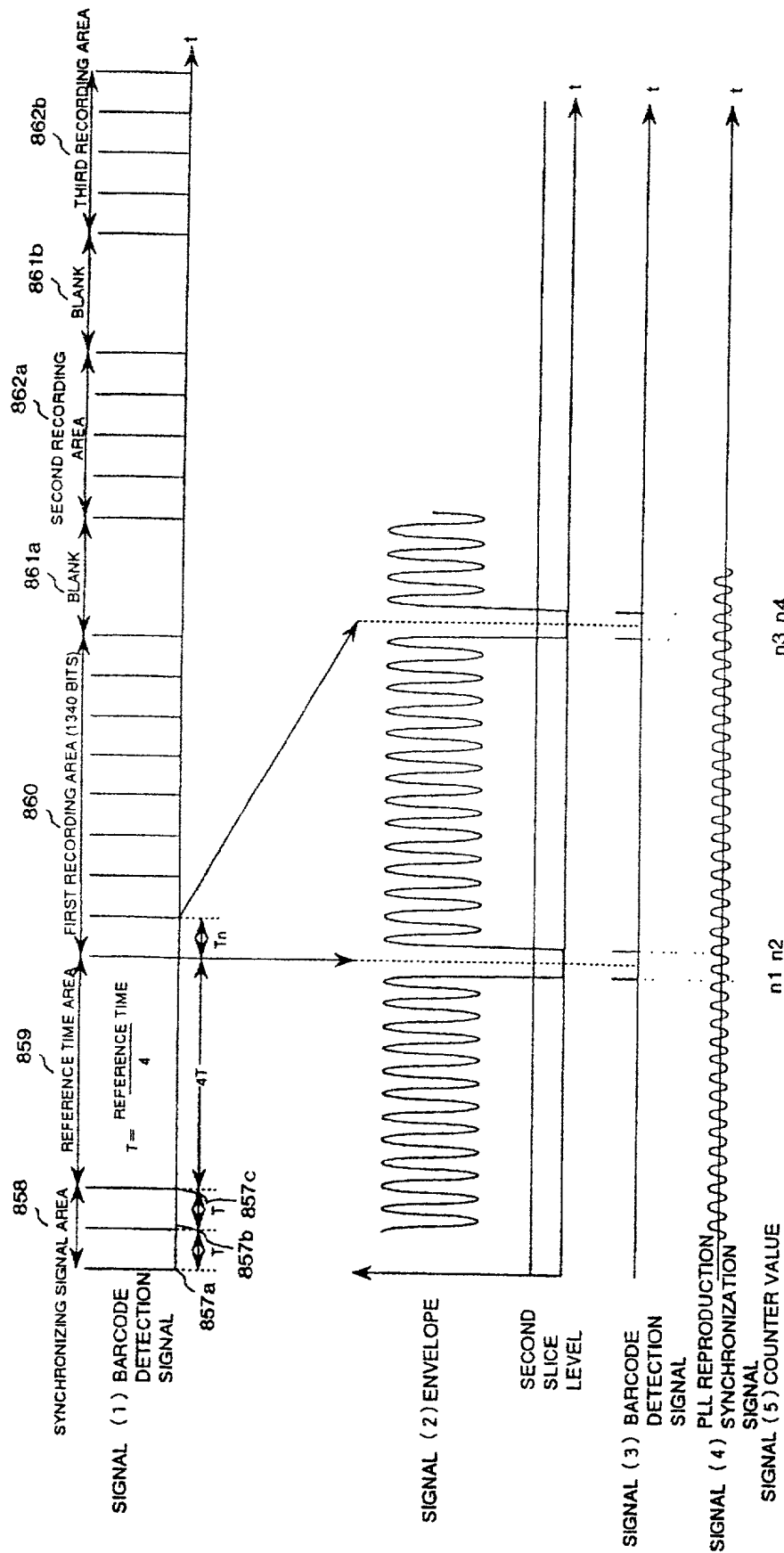
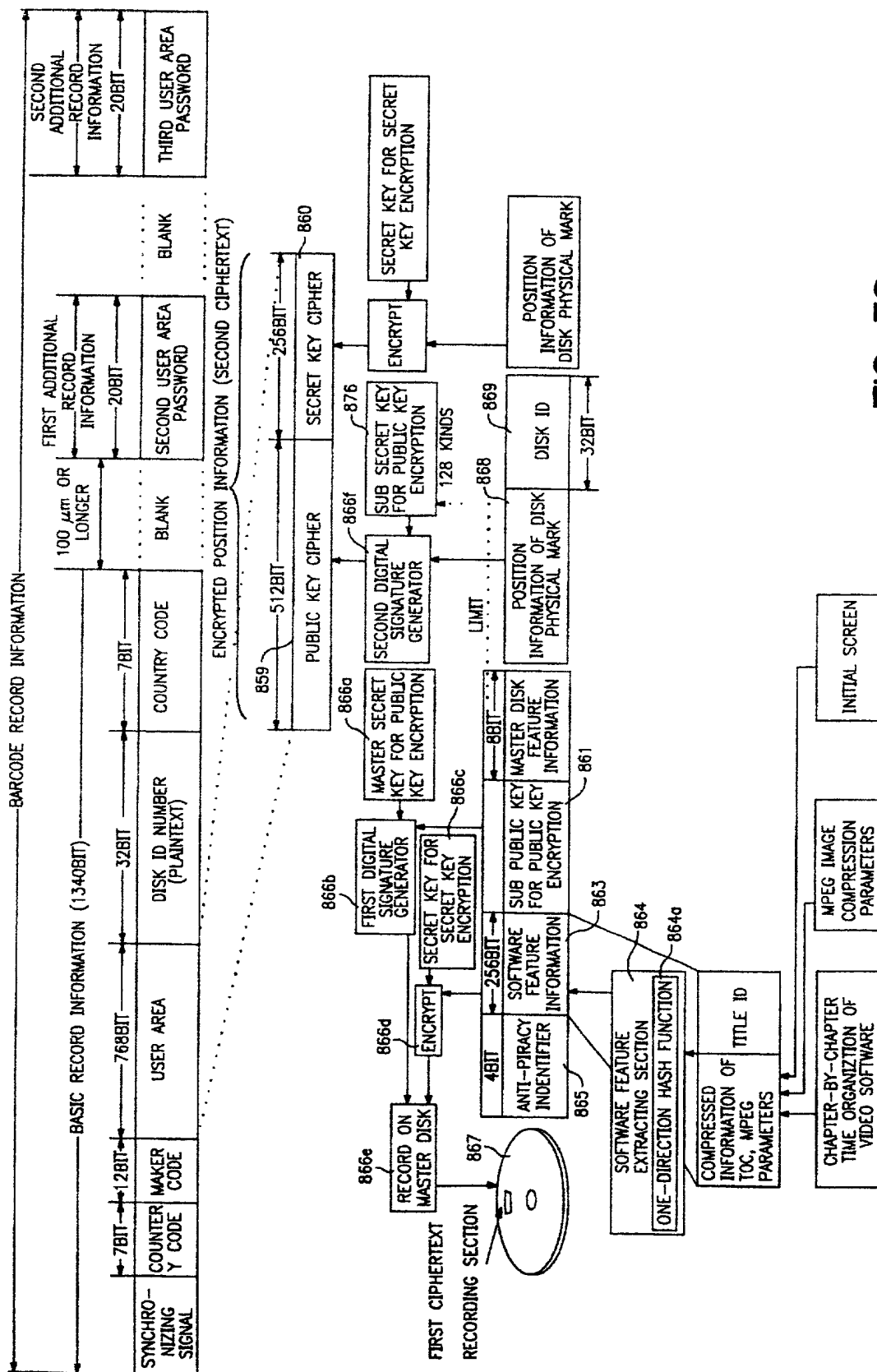


FIG. 31





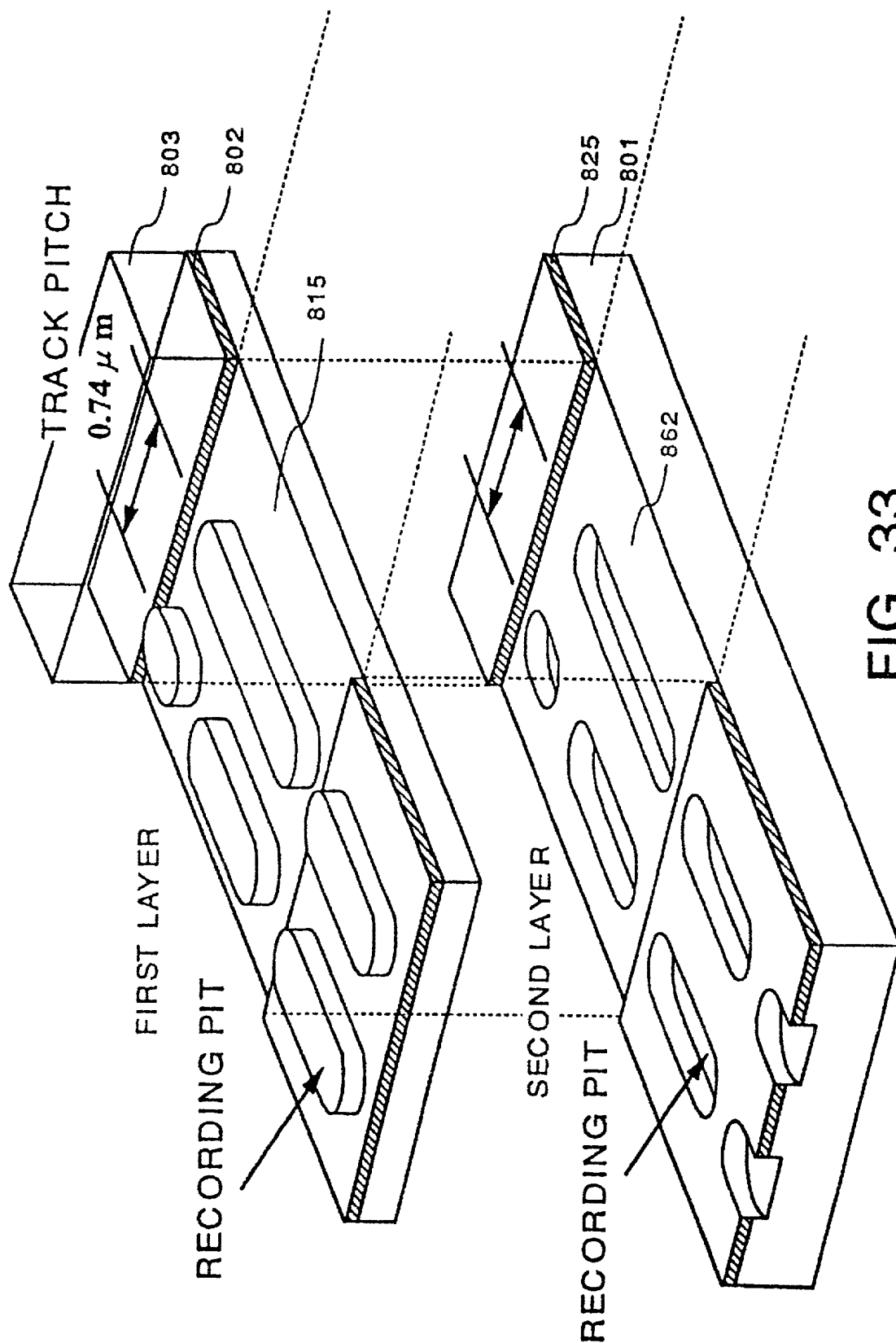
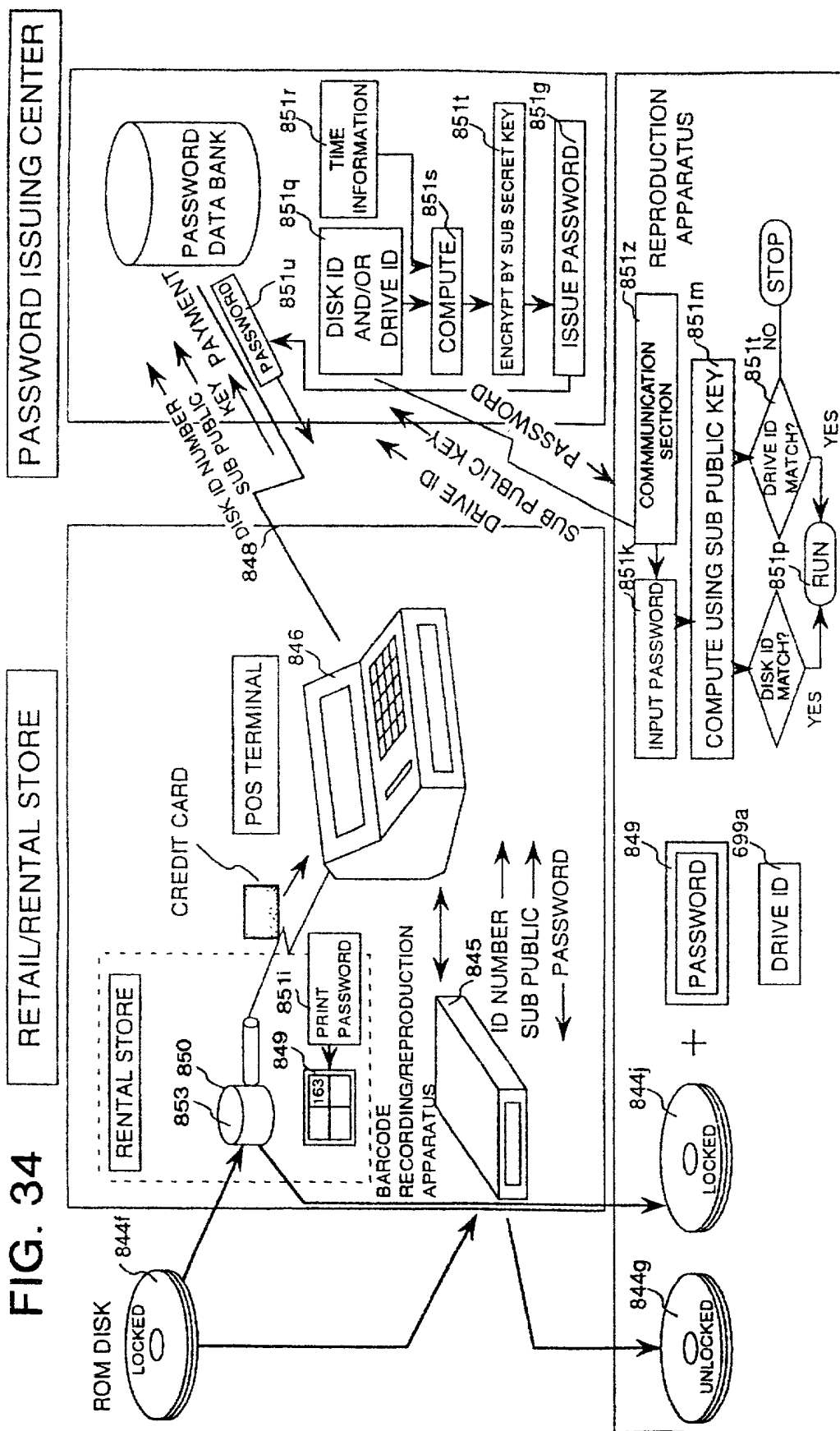


FIG. 33



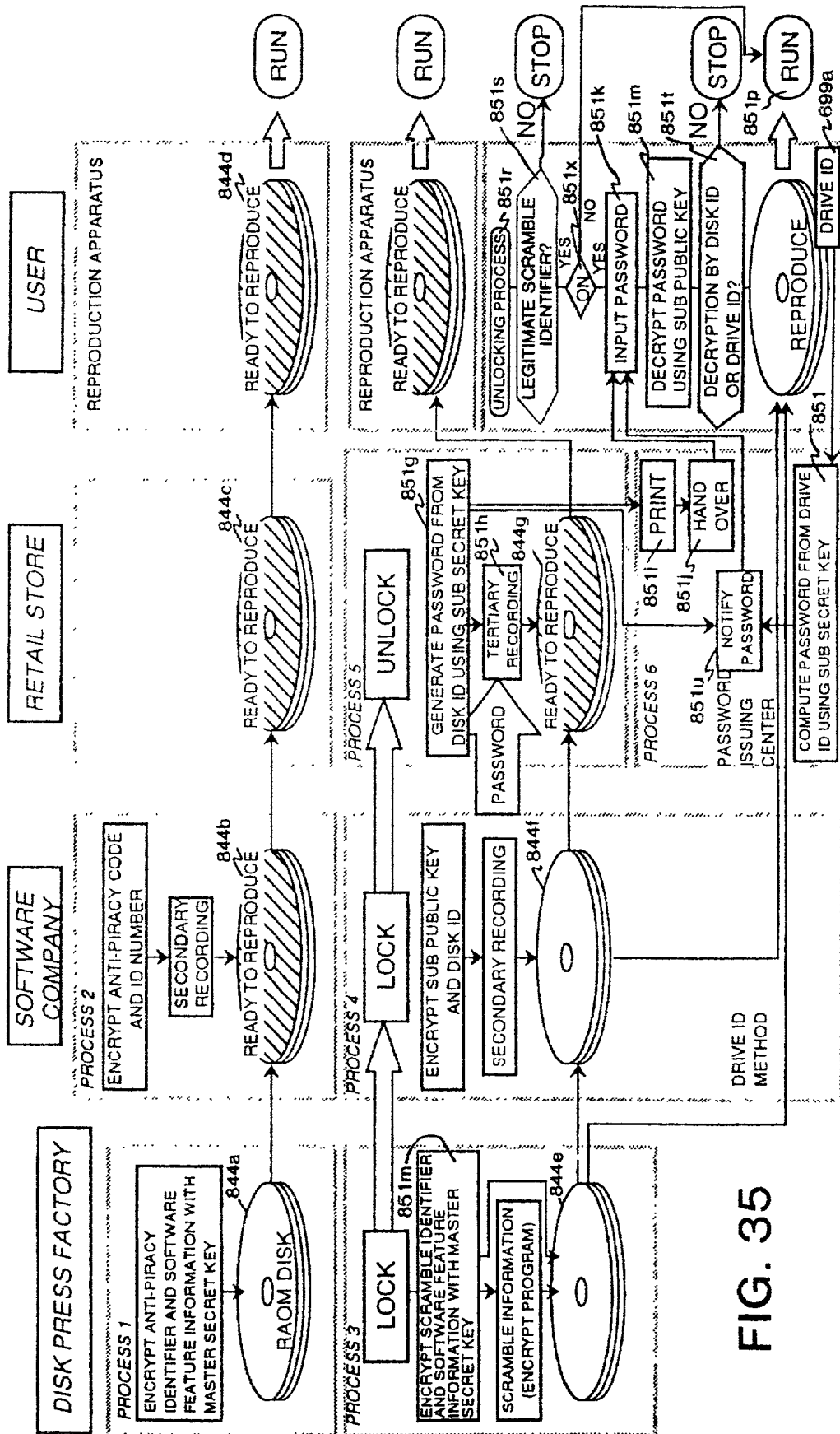
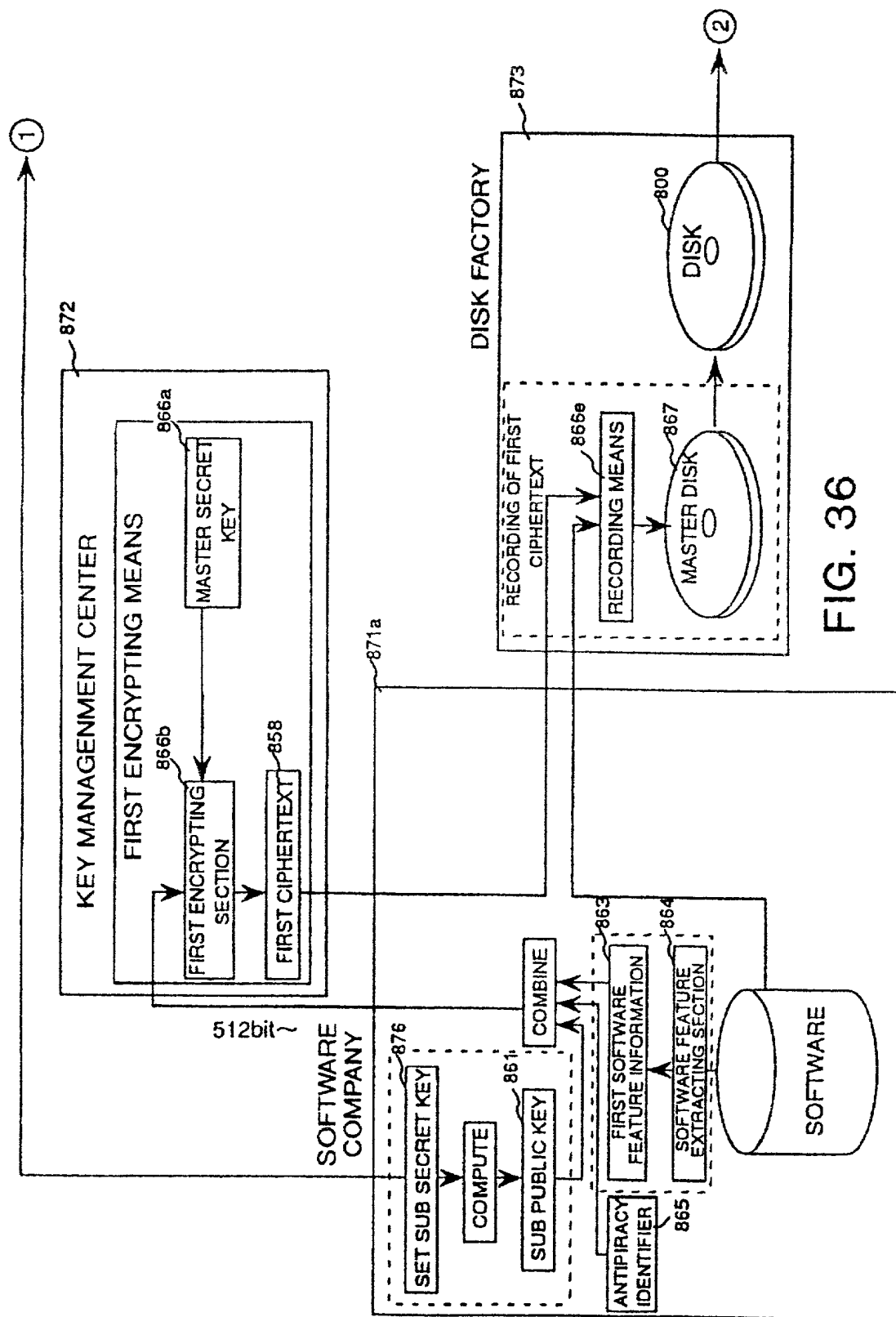


FIG. 35



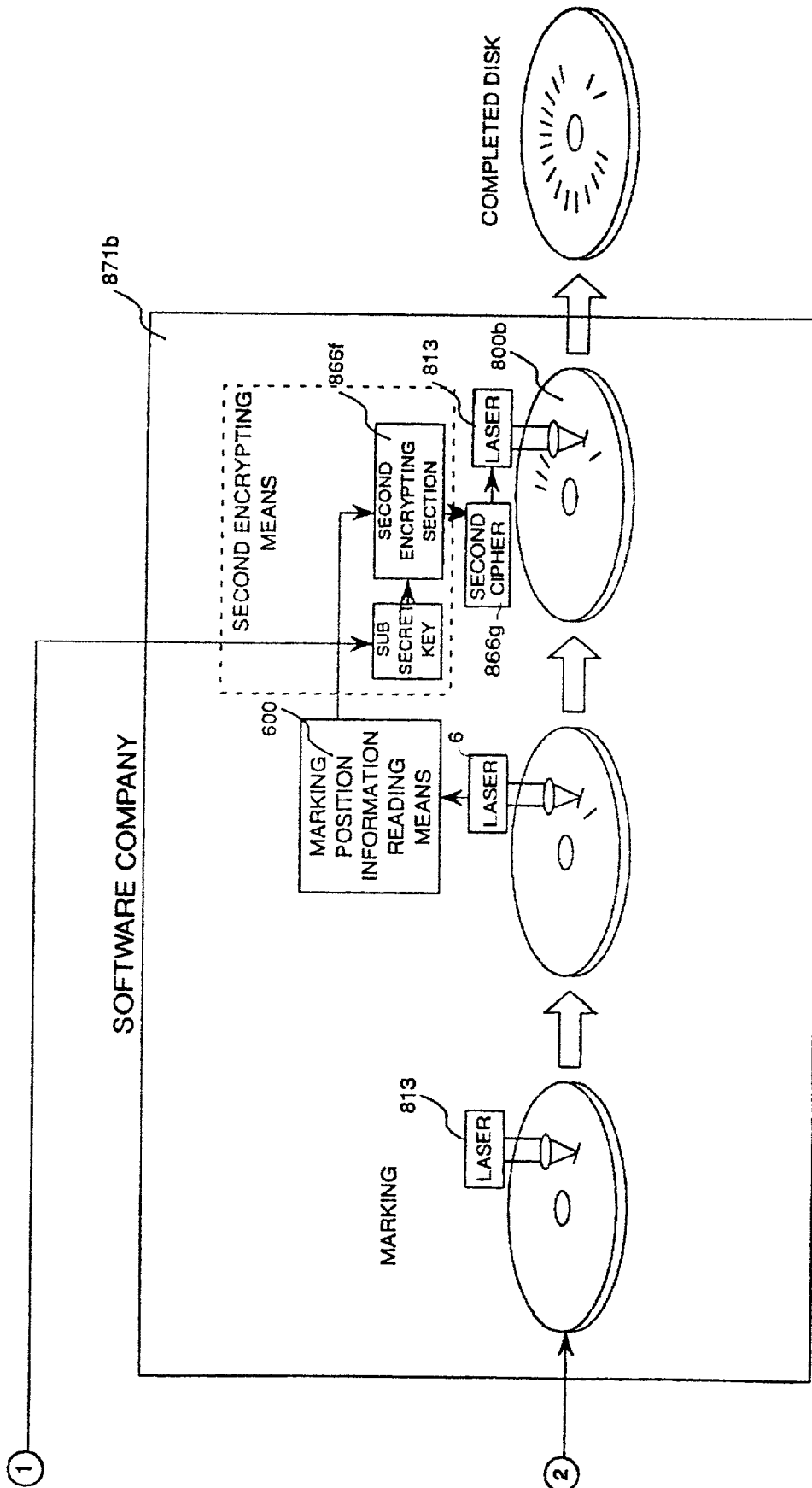


FIG. 37

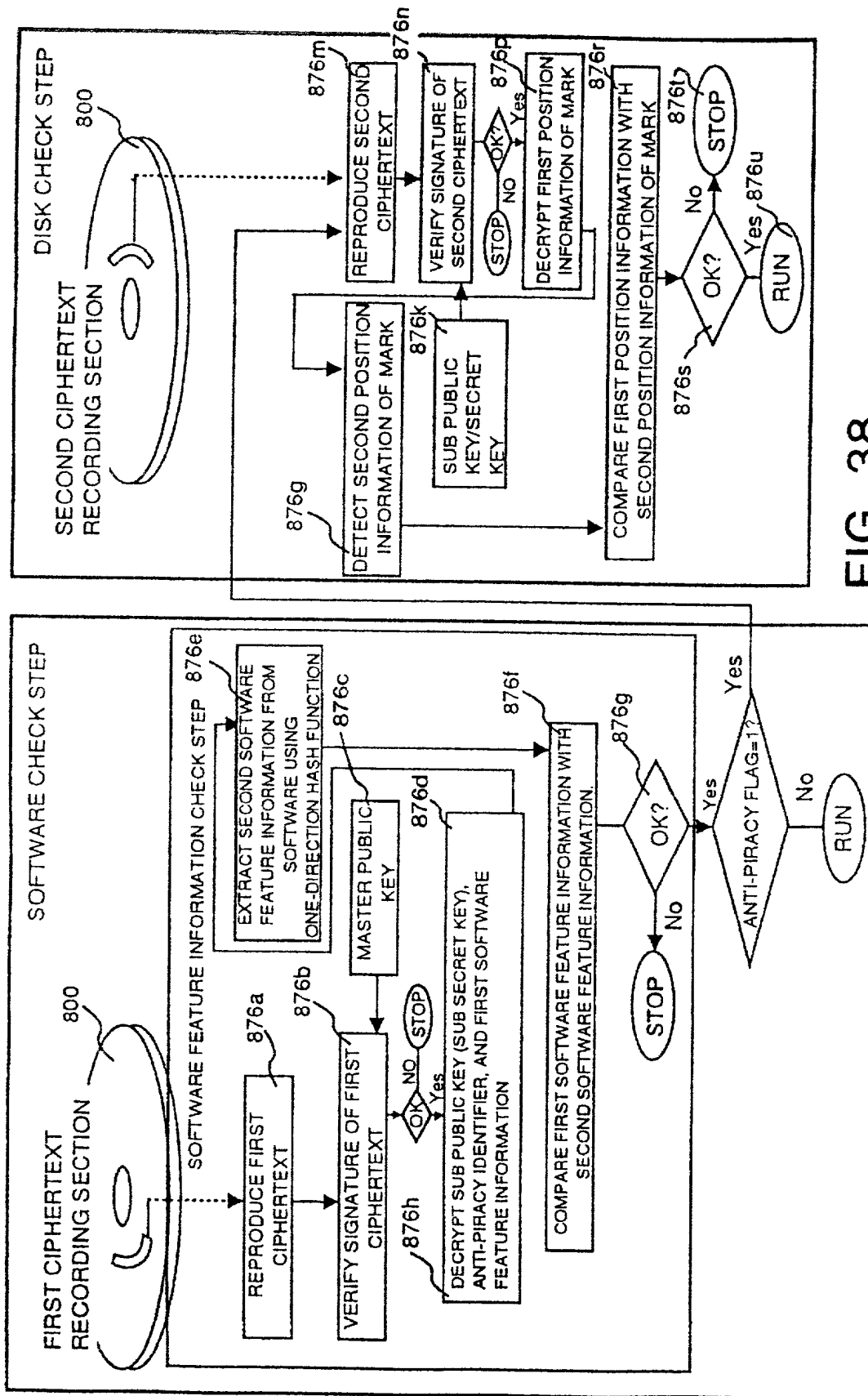
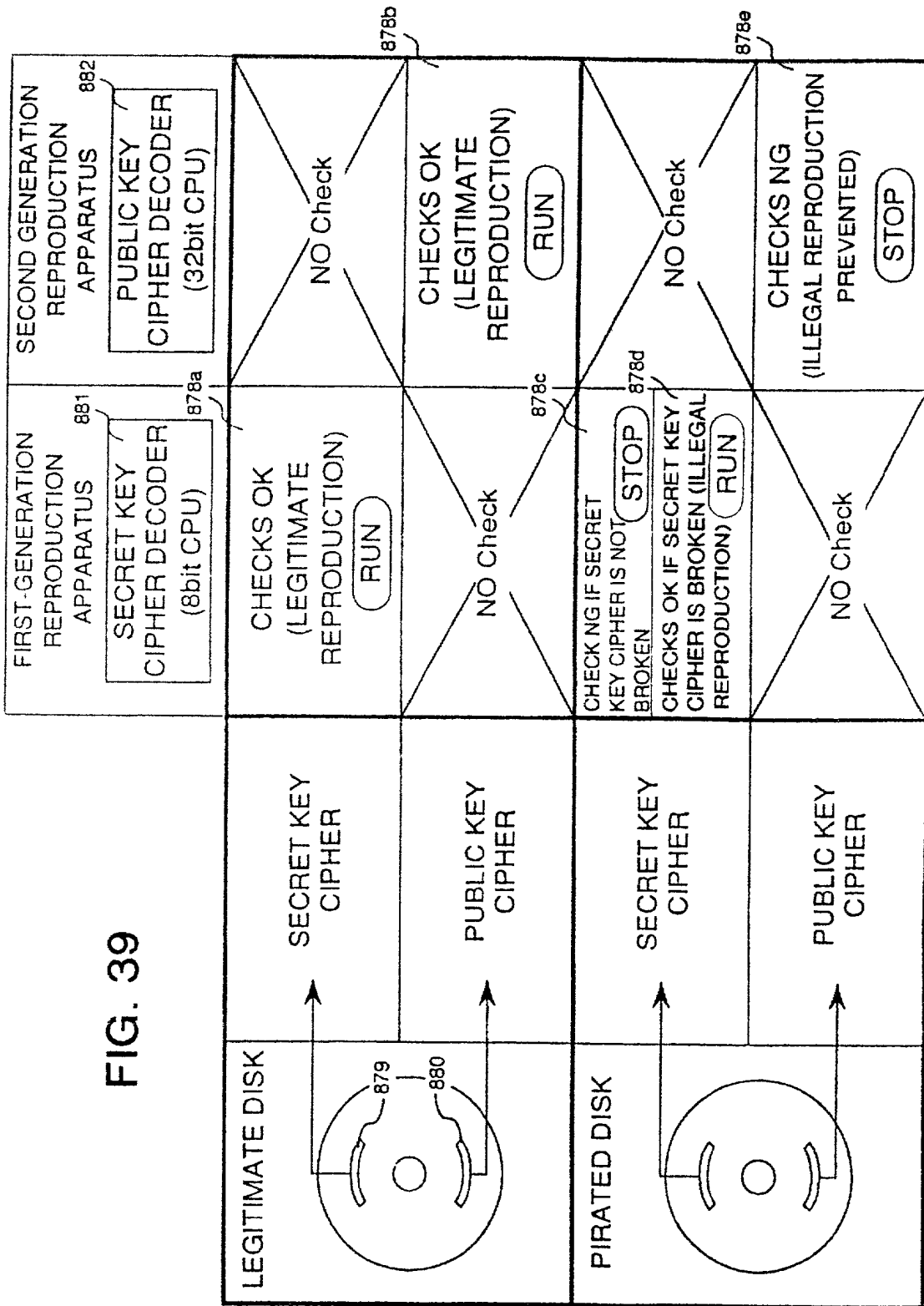


FIG. 38

FIG. 39





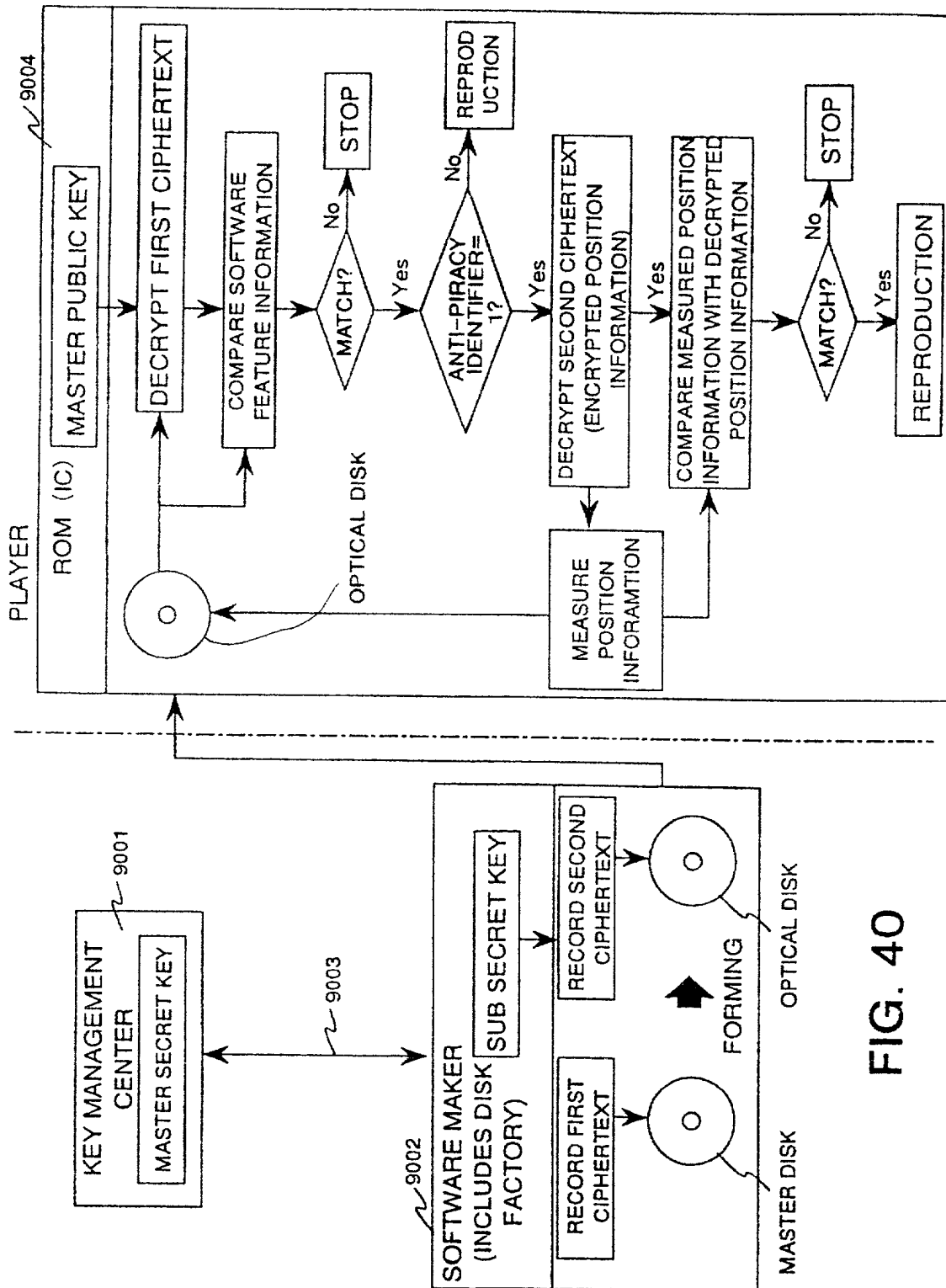


FIG. 40

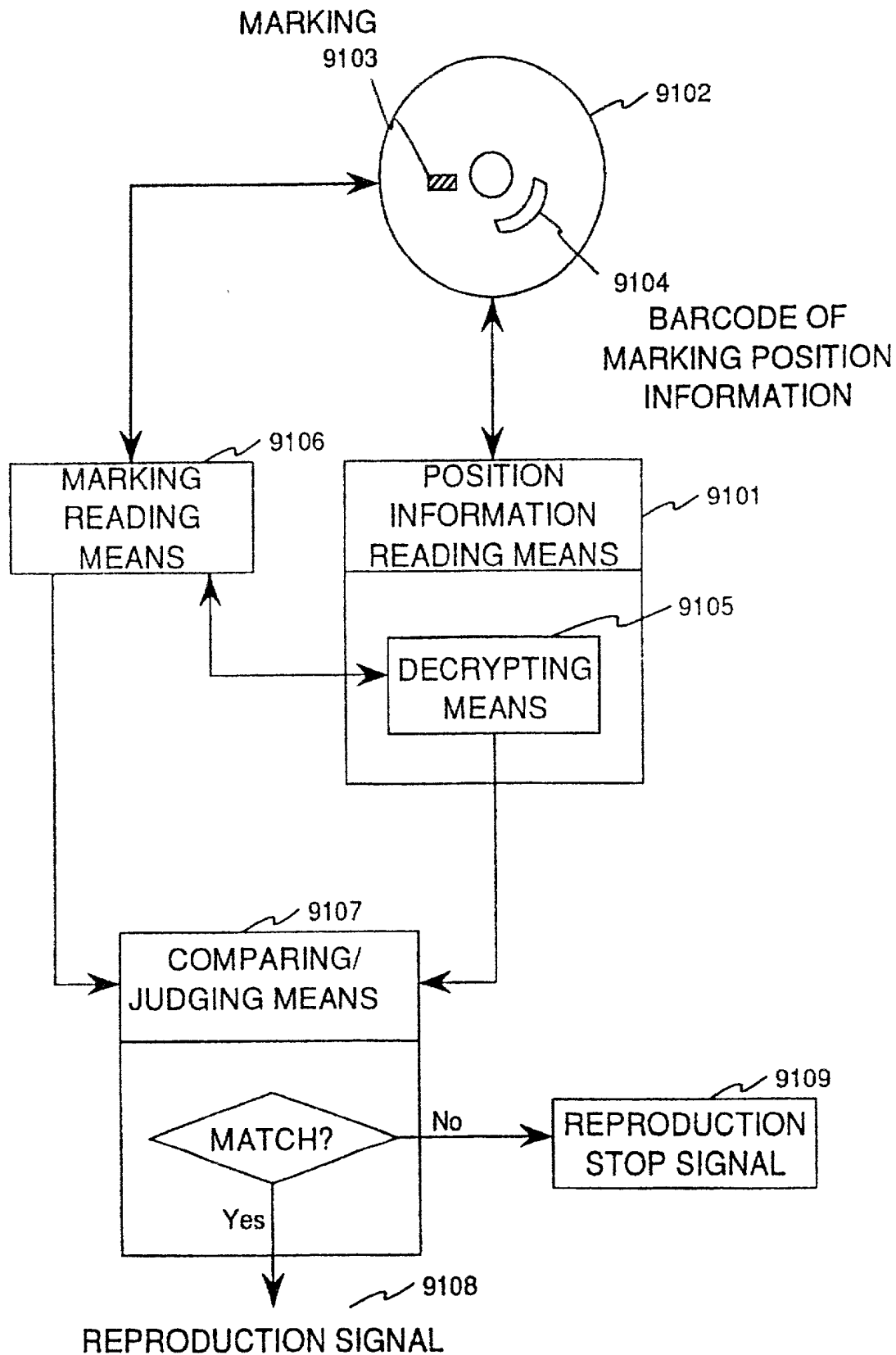


FIG. 41

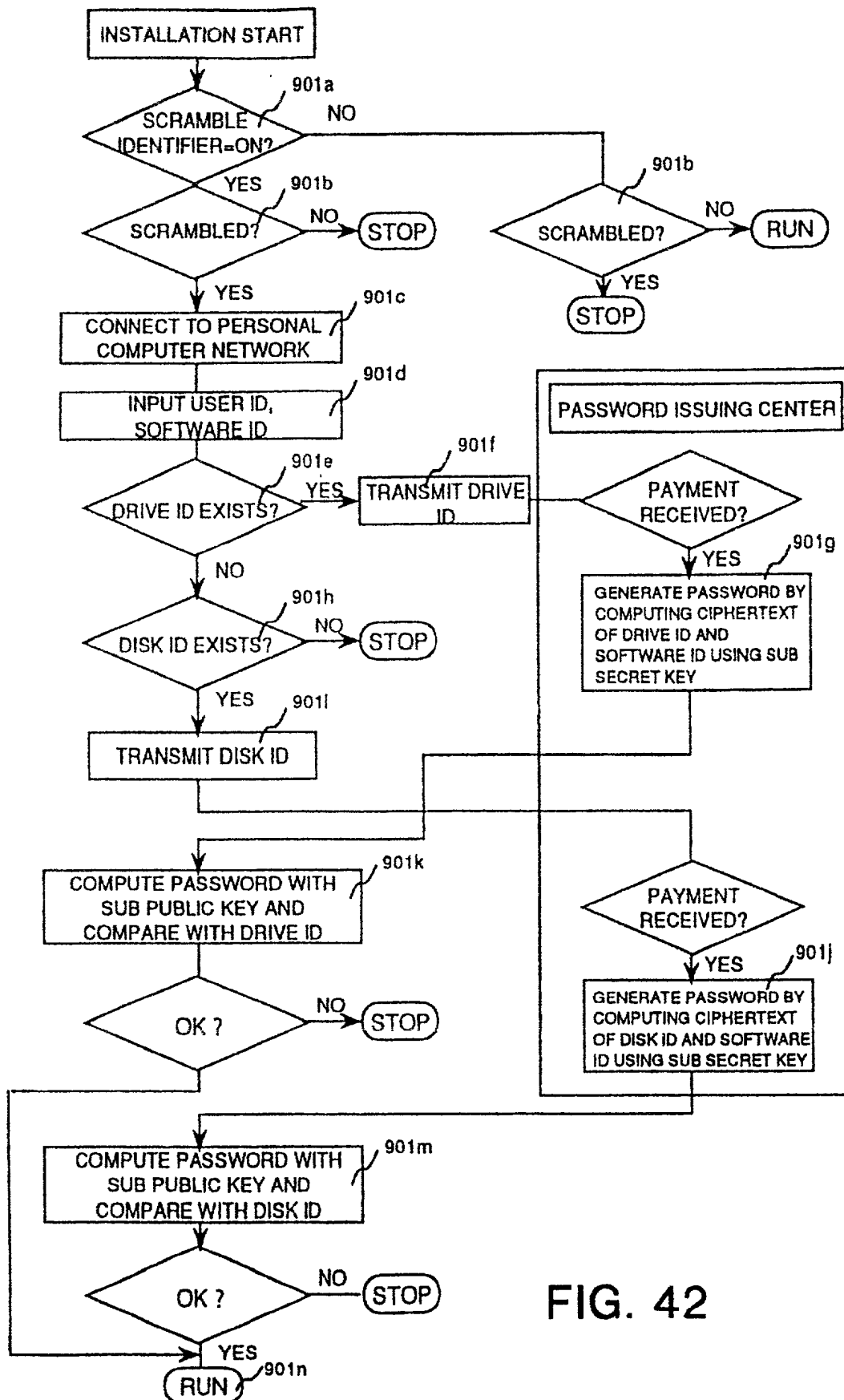


FIG. 42